The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLI. CHICAGO, ILLINOIS, DECEMBER 19, 1903. No. 25.

Original Articles.

AN EPIDEMIC OF TYPHOID FEVER FROM SEWAGE POLLUTION OF CITY WATER SUPPLY.

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LOWELL, MASS.

Typhoid fever is such a widespread and universal disease that any observation tending to show its origin or mode of conveyance has more than ordinary interest. Drinking water has long been suspected as one of the media by which typhoid bacilli enter the body, and there set up their characteristic sequelæ. This suspicion has been more or less strengthened from time to time by epidemics in which there was considerable probability that an infected water supply was the means by which cases of typhoid fever multiplied. In the epidemic of typhoid fever, which forms the basis of this paper, a chain of evidence of cause and effect is so complete that it is worthy of presentation. In order that the whole situation may be as clear as possible it will be necessary to relate what might be called a history of the water supply.

Lowell, Mass., is a manufacturing city of about 100,000 population, situated on the Merrimac River between Manchester, N. H., and Lawrence, Mass. Both of these cities are mentioned, as reference is to be made to the typhoid fever cases in each. Prior to 1893 all the water furnished, both for drinking purposes as well as that used for domestic and manufacturing purposes, was taken from the Merrimac River, the result being that Lowell experienced an epidemic of typhoid fever whenever Manchester increased the river pollution by sewage from an unusual number of typhoid cases. This is best shown by the appended table:

TABLE I.

	Cases.	Deaths.
1890	459	123
1891	293	77
1892	373	75
1893	160	53
1894	282	50
1895	172	33
1896	178	36
1897	105	18
1898	119	24
1899	57	17
1900	85	17
1901	70	18
1902	83	16

The above table represents a reduction in the death rate from 1.58 per 1,000 inhabitants to .11 in thirteen years. Lowell in its turn transmitted the disease to Lawrence until the latter saw the folly of continuing the use of polluted river water and substituted filtered water for drinking purposes. In 1893 Lowell introduced a system of driven wells for the supply of city water.

This system was further extended in 1894-95 and in 1896, when all connections with Merrimac River water were severed, and the total daily consumption taken from the driven wells. The manufacturing companies did not partake of this new water supply, but continued to maintain an independent system, consisting of Merrimac River water pumped into a private reservoir to be used for fire purposes and a second supply pumped directly from the canals into the supply pipes in the mills. This latter is also Merrimac River water and is used for manufacturing and sanitary purposes. Some of the mills have made connections with the city system, but the large majority use only Merrimac River water, and as this is furnished at the sinks there is more or less use of it by the operatives for drinking purposes. Each sink has a large placard marked "poison" over the faucets, and the operatives are forbidden to use the water for drinking. Although many of the mills send boys with pails to wells in the neighborhood for drinking water, nevertheless cases of typhoid fever are constantly occurring among operatives in which the use of canal water is the most likely mode of infection. There are approximately 20,000 operatives in the mills. The corporation reservoir supplying the mills is situated thirty feet higher than the city reservoir supplying the same districts with well water for all purposes. These two systems are separated at a point of intersection by a check valve, and this was thought to be sufficient protection against the possibility of any intermingling of the two. The check valve is composed of four "flappers" which close automatically and remain closed on account of the greater pressure in the corporation system than that in the city system. In the event of fire, demanding any unusual supply of water from the corporation system, the valve opens as soon as this demand so lowers the pressure that the pressure in the city supply exceeds that in the other; in this way the city supply would reinforce the corporation supply. When the latter recovered its loss its increased pressure closes the valve again, and two systems remain separated as before.

PRESENT EPIDEMIC.

On the evening of Saturday, July 18, 1903, a large fire occurred in the Merrimac manufacturing mills, which drew heavily on the water supply from the corporation reservoir, sufficient to allow the check valve to open in the manner described above. The fire lasted from 8 p. m. Saturday to 2 a. m. Sunday, after which time steps were immediately taken to replenish the low supply of the reservoir. To do this water is usually pumped from one of the wheel pits at the Lawrence manufacturing mills, or from one of the other canals. The canals had been drawn off Saturday afternoon, as

is the custom at certain times of the year, and the river near the opening leading to the wheel pit was very low on this particular day. About 550 feet from this entrance to the wheel pit is an outlet of one of the city's sewers emptying into the river; consequently the sewage must have been sucked into the pit, and from there pumped to fill the reservoir. This is well shown by the accompanying diagram:

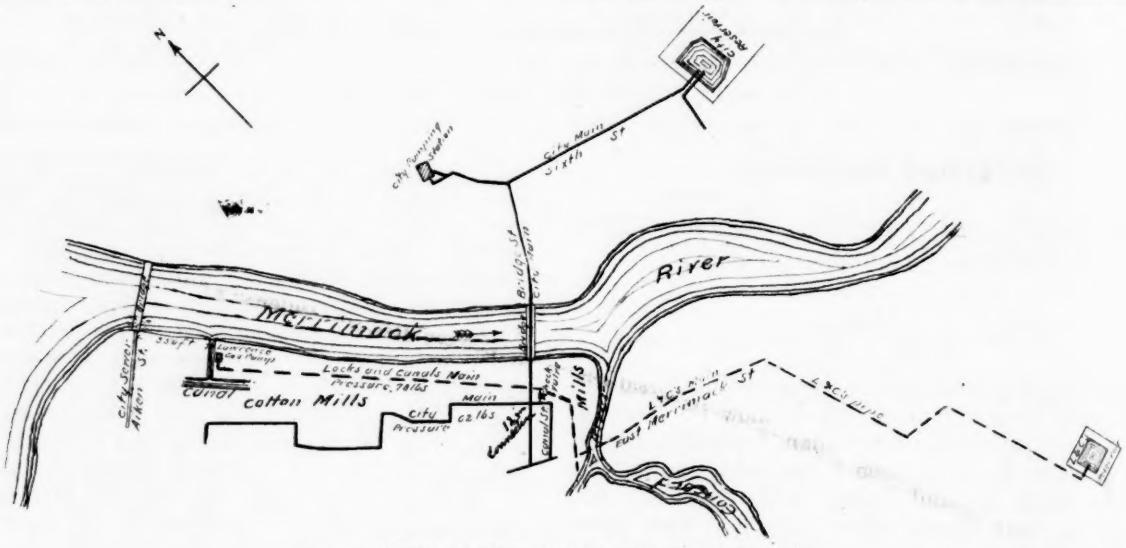

Fig. 1.—Sketch showing location of open check valve.

Seven hours later (9 a. m.) it was discovered that little or no headway was being made in refilling the reservoir. This led to an investigation which revealed the fact that the check valve described above, separating the city supply and the corporation supply, did not close when the increased pressure was applied; thus the sewage contaminated water was being driven directly into the city mains, there mixing with the driven well supply. From the point at which intermingling took place the water naturally was driven in those directions in which there was the least resistance, i. e., where water was being used, and also in a direction most direct from the break in the current, consequently any ill effects from the contamination of the water would show itself in the localities thus supplied. On account of the time of the day as well as the day of the week (Sunday) the consumption of city water was at its lowest point, thus giving the polluted water a much wider range of distribution than would otherwise have been possible. In two days after the above-described occurrence the number of cases of enteritis and gastro-enteritis was so great that it was plainly evident that an infection of some sort had taken place. These cases were principally among adults and were not associated with any climatic change. Their distribution was such that there was but one common cause probable, namely, drinking water. Families living in districts supplied with water from the high pressure (city) service were not affected, while nearly all the cases occurred on the low service separated from the corporation system by the check valve. No suspicion could be attached to either the milk or ice supply.

There had been four cases of typhoid reported to the health department during July. About August 1 cases of typhoid fever began to be reported with alarming frequency. One hundred and thirty-six cases were reported during August, and 38 during September. These cases were reported weekly as follows:

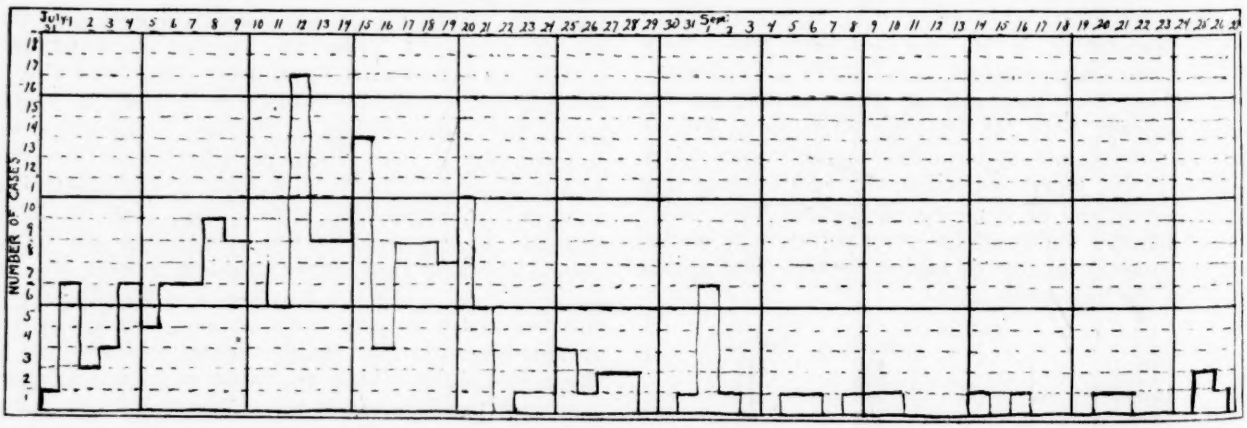

Chart showing the dates on which the cases went to bed. (The fire occurred July 18. The first cases appeared about July 31.)

TABLE II.

	Cases.	Deaths.
August 1 to 8	0	0
August 8 to 15	13	0
August 15 to 22	75	1
August 22 to 29	41	1
August 29 to September 5	20	2
September 5 to 12	7	2
September 12 to 19	8	2
September 19 to 26	4	0
September 26 to October 3	4	1

Many of the cases reported as typhoid in August and September came from families or houses in which there had been cases of enteritis during the period July 19 to August 1, some members of the family recovering fully from the acute enteritis, while others went on to a

well-developed typhoid. The accompanying interesting chart, prepared by Dr. Frank L. Morse of the Massachusetts State Board of Health, shows the dates on which the several cases of typhoid fever became ill enough to go to bed, thus differing from Table II, which shows the dates on which the cases were reported to the health department.

No bacteriologic examination of the city's drinking water was made between the dates July 19 and 29. On the later date the city's supply pipes were thoroughly flushed; this reduced the possibility of finding traces of the supposed contamination to a minimum. It was estimated by the water department that about 500,000 gallons of sewage or Merrimac River water found its way into the city's water service between the hours of 2 a. m. and 9 a. m. July 19, before the defective valve was discovered. This amount is equivalent to about one-twelfth the average daily consumption of city water. There is no way of estimating how long before 2 a. m. the two systems had been in communication. On July 29 (ten days after the contamination) the State Board of Health made a bacteriologic examination of the water. The following report, which I am permitted to publish through the kindness of the water department, explains the findings of that examination:

OFFICE OF THE STATE BOARD OF HEALTH.

BOSTON, Aug. 26, 1903.

To the Lowell Water Board, Lowell Mass.

Gentlemen:—In response to your request of July 28 for bacterial examination of the water supply of the city of Lowell, the board caused samples to be collected from various parts of the city on July 29 and again on July 31, and sends you herewith the results.

The average number of bacteria found in different parts of the city on July 29 was 17, which is nearly the same as the number found at the force-main at the boulevard wells, indicating no added pollution at this time. This number is smaller than the average found in other driven well supplies throughout the state.

On examining these bacteria to learn if *Bacillus coli*, which is regarded as indicative of pollution by sewage, was present, none was found in any of the samples when the usual amount of one cubic centimeter was examined, but on examining one hundred times this amount this species was indicated in two samples, viz.: one taken from a store in Pawtucketville and one taken from Walker street. In both these cases the whole number of bacteria was unusually small, averaging but ten, indicating a small degree of pollution.

Another series of samples taken on July 31 gave somewhat higher number of bacteria present, but no greater increase than might be expected from the temporary effect of the flushing out of the city mains on July 29 after the collection of the first series. By this flushing and the subsequent filling the sediment remaining in the mains was probably stirred up, and the bacteria in this sediment and on the sides of the pipes were detached.

The number of bacteria in all of these samples averaged as low as in other driven well supplies of the state, but the presence of *Bacillus coli*, even in small numbers, was an unusual occurrence. With the first four samples of the second series all of the bacteria in 1,000 c.c. were also examined with no indication of *Bacillus coli*.

(Signed) SAMUEL W. ABBOTT, Secretary.

The water supply from this source had been regularly examined and had never shown the presence of the *Bacillus coli*.

TYPE OF THE EPIDEMIC.

As a whole, the disease was of a mild character, the death rate being 4.4 per cent. The city bacteriologist, in a personal letter to the writer, says: "The unusual increase in the number of cases of typhoid fever was noticed about August 1. Counting from that date to the end of September, 90 specimens of blood were received here. Of these 58 were positive, 25 were negative, 7 unsatisfactory for various reasons. In some of these the examination was repeated twice or three times before getting a positive result." Cases at the hospitals (about 50) were verified there, consequently do not figure in the above report. From a study of about seventy-five cases of the epidemic, seen at the hospitals and in private practice, the following characteristics prevailed: Onset sudden and often accompanied by a chill; temperature high at the start (102 to 104) and remaining high well into the third week; pulse slow and not in proportion to the temperature, being more often under 100 than over; diarrhea present in 55 per cent. of these cases; rose spots present in 80 per cent., and diazo-reaction positive in 90 per cent. of all cases, giving a positive Widal test; nose bleed absent in 90 per cent. of all the cases; the average duration of the fever was twenty-seven days, with a slow convalescence. Among the complications occurring the following were the most marked: Phlebitis in 8 cases, bronchitis in 6 cases, otitis in 4 cases, arthritis in 4 cases, neuritis in 2 cases, acute mania in 1 case, edema of the lungs 1 case, endocarditis 1 case (death). There were 8 cases of intestinal hemorrhage, 1 with a second hemorrhage. None of these died.

There were several cases in which the clinical picture of typhoid fever was not substantiated by a positive Widal test. These cases did not have rose spots nor an enlarged spleen. The complications mentioned above were as frequent in this class of cases as in the genuine typhoid. There were no means at hand to prove whether these belonged to the paratyphoid group, although this clinical diagnosis seemed well established.

I desire to acknowledge my indebtedness to the Massachusetts State Board of Health and to the Lowell water and health departments for their kindness in furnishing me with the results of their respective investigations.

THE UNITED STATES PHARMACOPEIA OF 1900.*

CARL S. N. HALLBERG, PH.G.
Member of the Committee of Revision.
CHICAGO.

The revision of the Pharmacopeia begun by the committee elected at the decennial convention in Washington, in 1900, is progressing as rapidly as is warranted by the importance and magnitude of the work.

The committee lost its chairman in 1901, Dr. Charles Rice, pharmacist to the Department of Public Charities and Corrections of New York, who had filled that position with especial credit since 1880, and suffered further loss in the death of a life-long worker, Dr. Edward R Squibb of Brooklyn. The death of the chairman at a critical point of the work caused some delay until the vacancy was filled by Prof. Joseph P. Remington of Philadelphia. Partly due to this fact, but more especially owing to the many important questions, never before confronting a committee of revision, requiring solu-

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Materia Medica, Pharmacy and Therapeutics, and approved for publication by the Executive Committee: Drs. S. Solis-Cohen, George F. Butler and N. S. Davis, Jr.

tion, the work of revision has been more than usually delayed so that the book will in all probability not appear until in 1904. The official life of the U. S. Pharmacopeia will, therefore, not be synchronous with its decennial designation (1900-1910), which, however, is not of any especial significance.

THE SUBCOMMITTEES.

As an indication of the scope and character of the work of revision the enumeration of the following subcommittees and the subject allotted to each may be of interest:

1. Therapeutics.
2. Posology.
3. Botany and pharmacognosy.
4. General and inorganic chemistry.
5. Organic chemistry; also fixed oils and fats.
6. Proximate assays.
7. Volatile oils and allied substances.
8. Extracts, tinctures, etc.
9. Aromatic waters and spirits.
10. Cerates and allied compounds.
11. Syrups and elixirs.
12. Miscellaneous galenicals.
13. Weights and measures.
14. Scope and statistics.
15. Nomenclature.

LIMITATION OF PURITY.

Among the most important subjects for consideration, and one which heretofore has received but little attention, was the limitation of purity of medicinal chemicals. To the medical mind, the propriety of this question may well appear doubtful. Why should there be any limitation? Only the purest is sufficient for medicinal uses, or for the purposes of the physician. The proposition is, however, not so simple, since there are certain requirements of a practical character which must be taken into consideration. The U. S. Pharmacopeia (1890), now official, requires for a number of largely used chemicals a greater degree of purity than is obtainable by ordinary chemical processes, a standard—as is claimed by reputable manufacturers—to be obtained only by such expensive processes as to necessarily increase the cost of the product, and as to be in some instances almost prohibitive.

It should be clearly understood, however, that these impurities comprise mostly the presence of very small quantities, sometimes 1 per cent. or less, of sulphates and chlorids in bromids, iodids, phosphates and similar salts, the contention on the part of manufacturers being that the removal of such traces of these foreign salts would be exceedingly difficult, and since their presence could have no possible therapeutic significance, their absolute removal would be a useless expenditure.

Some instances were cited in support of the contention that the presence of even slight traces of foreign salts, innocuous of themselves, might under certain conditions produce entirely unexpected results; thus, for example, when potassium bromid is prescribed with barium chlorid in watery solution, there will be a precipitate of the insoluble barium sulphate in the presence of the slightest trace of sulphate in the potassium bromid. Such instances are, however, exceedingly rare and do not impair the position that mere traces of such impurities in these salts should not be excluded by the U. S. Pharmacopeia.

Another reason for not setting the standard too high is that it is impracticable to have two standards official, and since the pure food and drug laws in some states refer to the U. S. Pharmacopeia as the standard, druggists and dealers would be liable to prosecution for selling chemicals for commercial and technical purposes where so high purity is not required, which deviate from the official standard of purity. Such prosecution, mostly ill advised, has been frequent in Ohio, and has been carried on to such an extent in the United Kingdom as to make such laws exceedingly unpopular, and alienating the support of a large and otherwise law-abiding element.

In quite a different category is the degree of purity as related to freedom from poisonous compounds, frequently contaminating medicinal chemicals. Compounds of poisonous elements, such as arsenic, copper, lead, tin, derived from the crude products in the process of manufacture, can not be too rigidly excluded. That no convenience of manufacturers or additional cost, no matter how great, will have any influence on the standard of purity required by the U. S. Pharmacopeia in these particulars is a foregone conclusion.

ISOLATED PRINCIPLES.

The question of substitution of isolated principles for natural products has come to the front largely during the present decade. Many of the volatile oils are mixtures of certain principles, such as the oils of eucalyptus, caryophyllus, cinnamon, gaultheria, betula and sassafras. While the pharmacology on these articles is meager, it is assumed that the principal principles represent the therapeutic virtues of the respective oils, and it is contended that, since these vary considerable in the amount of these principles contained, greater accuracy and uniformity would be secured by the substitution of these principles for the natural oils.

Among the principles of this and similar classes likely to be admitted to the U. S. Pharmacopeia are: Anethol, eugenol, guaiacol and guaiacol carbonate and saffrol. Eucalyptol and methyl salicylate are now official.

SYNTHETICS.

The admission of synthetic products controlled by patent or proprietary rights has also received much attention. The ethical medical position is unequivocally opposed to the recognition of any substance whose composition is secret, or the manufacture of which is in any manner not free; and yet medical men, even the very highest authorities, prescribe them and exploit them in the journals. While the Pharmacopeia is supposed to have ignored them, such is not the case. The first synthetic medicinal chemical made by a patented process, salicylic acid, was admitted to the U. S. Pharmacopeia in 1880. In the present U. S. Pharmacopeia (1890) they are official of this class in addition to salol and lanolin, although under a name different from the trade name. On this point the instructions of the decennial convention of 1900 to the committee of revision were as follows:

> The committee of revision is authorized to admit into the Pharmacopeia any product of nature of known origin; also any synthetized product of definite composition which is in common use by the medical profession, the identity, purity or strength of which can be determined. No compound or mixture shall be introduced if the composition or mode of manufacture thereof be kept secret, or if it be controlled by unlimited proprietary rights.

The committee, desiring to adhere to the spirit, if not strictly to the letter, of the instructions of the convention, after considerable deliberation decided "to admit those substances for which there is, or may be, a product or process patent which expires during this decade (i. e., 1900-10), carrying with it the expiration of the trademarked name, as distinguished from a symbol or device."

According to this, none that are patented will be admitted if their trade-mark does not expire with their patent, and none that are trade-marked without being patented. Should legal advice conclude that trade-marked names expire with patent, then only such that are patented will be admitted whose patents expire before 1910. Among those proposed for admission under this decision are chloralamid, ethyl carbonate, hexamethylene-tetramin, iodol, methylene blue, phenacetin, piperazin, saccharin, phenyl salicylate (salol, now official), sulphonal, trional, aristol and salophen. The following would be excluded: Creosote carbonate, eucain, heroin, holocain, ichthyol, methyl acetanilid and orthoform.

ALKALOIDAL ASSAYS.

The U. S. Pharmacopeia of 1890 requires a certain alkaloidal standard for opium and cinchona, and the preparations of opium and nux vomica. This list will be largely extended, and assay processes fixing a standard of alkaloidal strength for the preparations of the following drugs have been proposed: Opium, cinchona and nux vomica, belladonna, hyoscyamus and stramonium, coca, guarana and kola, physostigma, ipecac, hydrastis, colchicum, pilocarpus, conium and jalap.

ANTITOXIN.

One of the most difficult questions for the committee to solve has been the admission of diphtheritic antitoxin. The principle of the Pharmacopeia heretofore has been that, inasmuch as the pharmacist is charged with the responsibility of maintaining the standard of identity, purity, quality and strength of all articles official, the Pharmacopeia must provide such definitions, descriptions, tests and assay processes as will enable him to determine whether or not the articles recognized by the Pharmacopeia respond to the official requirements. Since no biologic or pharmacologic tests have ever been admitted to any Pharmacopeia, presumably because these were not within the province of pharmaceutic practice, the admission of any article whose purity and potency could not be determined except through biologic methods appeared to be an insurmountable obstacle to the admission of any biologic product, and the convention, therefore, declared: "Physiologic tests for determining strength should not be introduced by the committee."

Owing, however, to the transcendant importance of the question of antitoxin, and inasmuch as the instructions of the convention were not directly mandatory, and especially in deference to the physicians on the committee who voiced the sentiment of the profession, evidently unanimous, as to the desirability, if not necessity, for the admission of antitoxin, and in order that the U. S. Pharmacopeia (1900) may not be charged with indifference to the greatest remedial agent of the decade it is to represent, the committee of revision decided to carefully consider the question. The matter was referred to a subcommittee, consisting of the physician-members of the committee, together with a number of eminent specialists in this field, with the late Dr. Walter Reed as chairman. Owing to the untimely and sad death of Dr. Reed, Dr. Theobald Smith was subsequently chosen to act as chairman, and this committee is now formulating a plan by which the antidiphtheritic serum will in all probability be admitted to the U. S. Pharmacopeia on the plan somewhat similar to that of the German Pharmacopeia of 1890.

POSOLOGY.

The question of dosage has always been a bugbear to pharmacists. Some (without being able to formulate the proposition, what is a dose? In the terse manner of Dr. S. Solis-Cohen, "A dose is enough") have felt that the Pharmacopeia was trenching on dangerous ground in endeavoring to adopt an authoritative list of doses. It was charged, however, that the lack of such dose list in the only legal authority on medicines materially lessened its value to the practitioners, and that such should be incorporated. The sentiment of the convention being almost unanimous on this question, the committee was instructed to state the average approximate adult dose, and, where deemed advisable, also for children, after all articles which are used or likely to be used internally. These are to be given in metric quantities, as well as in approximate customary weights and measures. It is to be the distinct understanding that these doses are not to be regarded as obligatory or as not to be exceeded by the physician whenever in his judgment desirable, and a declaration to that effect is to be prominently made in the book. Its purpose, then, is simply to serve as an authoritative reference guide to pharmacists and physicians.

NOMENCLATURE.

While the aim of the Pharmacopeia is to adhere to a scientific nomenclature, it can not invariably do so. To change old familiar titles of some chemicals so as to conform to the modern chemical nomenclature would create confusion, be inconvenient in prescribing and dispensing, and impair the usefulness of the alphabetical arrangement. Carbolic acid, for example, would appear as "phenol," and arsenous acid as "arsenic trioxid," if the chemical nomenclature be strictly observed. Since the scientific names are invariably appended as synonyms for such titles, as well as for such articles as may be admitted under trade names, there can be no objection to such deviation from the scientific nomenclature in the official titles as may be determined for the greater safety and convenience of physicians and pharmacists. Sometimes the title appears in contradiction to the chemical name, without apparent justification, as in "chloral" of the U. S. Pharmacopeia of 1890, which should have been "chloralis hydras"; chloral being a liquid, the hydrate of which is the well-known crystalline solid. The best of reasons, however, prompted this violation of chemical usage, namely, the belief that the use of the single word in prescribing would avoid the inevitable abbreviation of "chlor. hyd.," and thus prevent confusion with "chlorid hydrarg.," and consequent errors and complications.

DISCUSSION.

DR. W. J. ROBINSON, New York—I consider the United States Pharmacopeia the best in the world. I am familiar with all of them, and as far as definiteness, succinctness and tests for purity are concerned it ranks above all. Still it is not popular with the physician. You will seldom find a physician who studies the pharmacopeia and rarely one who owns the book. It has always interested me to know why the physician never refers to the pharmacopeia. Among the many reasons I will mention one—it is the principal one—the pharmacopeia does not contain a very large number of substances which the physician prescribes daily. It contains about 200 various drugs like phytolacca, chelidonium, illicium, inula, mezereum, pareira, juglans, etc., and such substances which the progressive physician of to-day never prescribes, while many of those which are in daily use are

not to be found in it. We can not blame the pharmacopeia for not admitting these substances. Many of them are proprietary remedies with a perpetual copyright, but still it is wrong to exclude them altogether. The solution of the question would probably be to have a pharmacopeia of the same character as the present one which should contain all the standard drugs, but it should have a supplement in which might be given the chief characters of that large class of drugs which are frequently used and of which we know the exact chemical constitution. That would not be giving them the full sanction of the pharmacopeia, but at the same time it would be serviceable to the physician. Concerning the dosage, I think that would be a valuable addition to the pharmacopeia and render it more popular. Of course, there should be no ironclad rule about the dose, as the mention of a definite dose might lead to confusion, but if the average dosage were included it would render the book more useful to both physician and pharmacist.

DR. B. PIROSH, Chicago—The pharmacopeia should be in the office of every physician, for there is no better source from which to derive information in regard to the peculiarities of certain drugs. Concerning the bringing into the pharmacopeia of these preparations the patents of which have passed limitation, it should make no difference to the physician whether or not the patent letter has expired. I would prefer a remedy the patent of which is running to one the patent of which has expired—provided the composition and the physiologic action is known to me—for the reason that so long as it is protected and in the hands of only one manufacturer we know it is pure. When the patent is taken off and other parties take up the manufacture then there is adulteration. I think the doses should be incorporated in the pharmacopeia, as this would give the druggist and physician an equal opportunity to check each other in case of mistakes (on either part). I believe it would be well if the names of some of the drugs could be changed from time to time. Here in America, although it is our own fault, it seems to be a part of our business to tell the patient what he gets. The only benefit I can see from the knowledge of the patient about the drug he gets is to caution the next physician in case of idiosyncrasy to a certain drug.

DR. W. B. HILL, Milwaukee, Wis.—The metric system and the dosage are two bugbears of the pharmacopeia of 1900. It is a simple thing to put down the figures, but to get the people to use them is quite a different matter. I believe the dosage is the key to the situation, but that means a real revision of the pharmacopeia, not a so-called revision. If we add a dosage system to the pharmacopeia, a system in which the strength of the preparations is given, within certain limits we make the use of the metric system possible; in other words, we should make it easier to name the dose in the metric system than in the English system. There would then be no question about its adoption. If we look over the various preparations we will find that tinctures vary all the way from 5 to 35 per cent., some for a very good reason, others without any reason. Under the metric system the tinctures could be classified in two or three classes, the stronger ones with a uniform dose of 1 c.c., the next class with average dose of 5 c.c., and the third class in larger quantities, such as the weaker tinctures. In this way we might so simplify the dosage that one could remember more easily in the metric system than in the English system. The greatest difficulty in training the memory so as to use the metric system is in the very small denominations. The trouble is in the unit, and it is difficult for the student to comprehend it. If the pharmacopeia were arranged in a double manner, on one side the tinctures and triturates, each with a uniform dose, and on the other side the fluid extracts and extracts with a uniform strength, I believe the metric system would be adopted within five years.

DR. O. T. OSBORNE, New Haven, Conn.—I believe the trouble lies in our hospitals. At the Yale Medical School I have taught the metric system for nearly twenty years, and will venture to say that not 25 per cent. of our graduates write prescriptions in the metric system to-day. We begin to teach materia medica in the second year, advanced pharmacology in the third year, and applied therapeutics in the fourth year. At the end of the second year the student is better versed in the metric system than he is at the end of the third year, and at the end of the third year he writes better prescriptions than he does at the end of the fourth year. This is because he is constantly coming in contact in journals, textbooks and clinics with prescriptions written in the old system. When the student gets into the hospital he sees no more of the metric system, and when he leaves he has almost forgotten that there is such a system. Hence I believe that until the hospitals abolish the old system and take up the new, the medical colleges can not advance the use of the decimal system. As to teaching the doses of preparations, as an example, I classify the tinctures into poisonous and non-poisonous and put as many as possible together under one dose. In this way the student soon learns that a poisonous tincture has a dose of a few drops, and a non-poisonous a dose of a teaspoonful.

DR. H. A. MOODY, Mobile, Ala.—Dr. Osborne has voiced my experience. I have been teaching materia medica for about ten years. In the first year my students are required to copy prescriptions from the blackboard in the metric system and it is discussed—and I mean discussed—the students are invited to participate in the discussion and compare the metric system with the old system. In the study of therapeutics the students write the prescription in the old method first and then translate it into the metric system in order to be masters of both systems, for this is necessary if they are to practice in rural districts. The result is that they gravitate to the old system, and nothing seems to stop them. I believe it was Lincoln who said that "you can not fool all of the people all of the time." So I think there must be some solid foundation for the preference for the old system or it would have been dropped long ago. It is a fact that it is the most popular system all over the United States to-day. Dr. Robinson said the pharmacopeia contained a lot of drugs that had become obsolete and were never used by progressive physicians, and among other substances he mentioned phytolacca. Now, phytolacca is not obsolete all over the country by any means. This illustrates how utterly impossible it will be to satisfy all parties by any decision as to which drugs shall be placed in the pharmacopeia and which shall be omitted, or go into the appendix. You will be sure to offend the sense of propriety of some. Another statement referred to was the physiologic test of drugs. The committee decided that they could not use that test of drugs for the pharmacopeia. It seemed to me that this referred principally to the animal serums. Now, there are other drugs whose strength we can ascertain in no other way, such as ergot, digitalis, etc. Is the physiologic test used to standardize medicines such as these?

DR. F. R. WEBER, Milwaukee, Wis.—We have in our school those who prefer the old system and those who prefer the metric. The effect of this is to accustom the students to one as much as to the other, and it is easy for them to prescribe in either system. It is only laziness that causes them to ignore the metric system. When the metric system was introduced in Germany, within a year all the old books and the old systems were changed. If our books would change and only contain the metric system how quickly would the nation throw off the old system and take up the new. The trouble with the United States is that we still prefer to read English articles, and in England it is practically impossible to introduce the metric system.

DR. C. S. CHAMBERLIN, Cincinnati—There must be some reason for the hold which the old system has on us. I studied both systems when at college and for three years taught chemistry, using the metric system entirely. In my practice I tried to use the metric system, but I never got beyond the point where I did not have to translate from the old into the new. In regard to phytolacca, Dr. J. B. Shoemaker has an article in the October, 1901, *Medical Bulletin* which covers

at least four pages, in which he declares that it is one of the best alteratives and the best of all remedies in mastitis.

PROF. C. S. N. HALLBERG—With reference to the scope of the pharmacopeia it has been very difficult to get anything like statistics in the United States. We have compiled the different kinds of articles which enter into hundreds of thousands of prescriptions in the different sections of the United States and we never before realized what a vast country this is. The medicines which may be considered obsolete in one section are used in great quantity in another section. You must remember that we have here in the United States a medical and a pharmaceutical population which is cosmopolitan. The United States Pharmacopeia may well be considered a combination of all the pharmacopeias of Europe revised and condensed. The committee does its best in getting information as to what these articles are and which should be admitted. As to the supplement, which should include a number of articles, as suggested by Dr. Robinson, I believe that is a questionable expedient. The pharmacopeia has a legal standing, not by act of congress, but by laws in the states wherever there is legislation affecting pharmacy or pure food and drug laws; in such states it is recognized as the standard. Of course, if these articles were simply enumerated therein it might serve a purpose, but that is doubtful. The American Pharmaceutical Association issues a National Formulary and it might be advisable to enumerate in that such articles as Dr. Robinson suggests. That the strength of galenic preparations should be based on the posology instead of on the drug strength is a new proposition and one not recognized in any pharmacopeia. The pharmacopeia is first of all the hand-book of the pharmacist; it is his manual from which he makes his preparations, as far as the galenic preparations are concerned, and because of the use of the metric system it is desired to maintain the percentage proportions. Any change, therefore, which would involve too much deviation would be embarrassing to the pharmacist. To fix even the general average doses of these preparations would make them of a strength without any determined relation to the drug. Dr. Wood, for instance, administers tincture of digitalis in teaspoonful doses, while others give one-fourth that amount. Now, what should be the drug-strength of tincture of digitalis? To obviate this confusion last year at Brussels there was a conference "for the unification of the strength of potent remedies." Dr. H. C. Wood, Philadelphia, attended this international conference, at which were representatives from every country in Europe. It was decided that tinctures should be in two classes, the potent drugs of a 10 per cent. and those less potent of 20 per cent. strength. That will be a great pharmaceutic convenience, though it does not conform to Dr. Hill's suggestion except to the extent that there is a distinction between potent drugs and those that are less potent. But here arises a great difficulty; the tinctures of the most potent drugs are of the greatest drug strength; tincture of aconite is 35 per cent., tincture of veratrum viride is 40 per cent. in strength, while tinctures of drugs which can not approach these in potency are only 10, or 5 per cent. The committee has, however, decided to follow this principle, and is going to change the strengths of the tinctures of aconite and veratrum viride to 10 per cent. There is a tendency toward the unification of potent remedies, and this conference fixed the strength of all arsenical solutions at 1 per cent., which is uniform in all the pharmacopeias. The question of patents raised by Dr. Pirosh is scarcely within the limits of the paper. A patent is limited to seventeen years. There is no objection to a patent, but what we call "patent remedies" are of secret composition and some get the name of being patented from the fact that the name or label has been copyrighted and the profession is not furnished the formula. The only way to learn the metric system is to work with it. Pharmacy students have to work with the metric system in all branches. Annually, during the course, a vote is taken among the students as to their preference, and only once in ten years one man said he preferred the old system after working with the metric system for three months. The great advantage of the metric system is shown in recent works on pharmacy and therapeutics. In the older works an ointment, for example, has to be prescribed "a dram to the ounce," or "30 grs. to the ounce." Compare that method of expression to the clear, concise statement that an ointment is 1 per cent., or 2 per cent., or 10 per cent. strength. Applied to solutions and preparations for external use the metric system goes hand in hand with percentage strengths, and is the only scientific method of expression.

HOW FAR SHOULD THE SPECIALIST IN RHINOLOGY AND OTOLOGY PRESUME TO TREAT THE SYSTEMIC CONDITION OF HIS PATIENTS?*

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In many of the papers dealing with the treatment of catarrhal conditions of the nose, throat and ears, we find such suggestions as the following: "The general health should be carefully looked after," "any deviation from the standard of health should be corrected," some putting the case stronger and claiming that no success can be hoped for unless the general health of the patient is made perfect, or at least made better. If this is the case, our first inquiry should be in regard to the qualification of the specialist. Is he able and prepared to make a diagnosis of all the obscure conditions of the general system which the general practitioner has overlooked? If he is able to do so will he do it in the short time which he generally devotes to the consideration of a case? Assuming that he is able and willing to do this, should he treat the case or should he refer the patient to his family physician, explaining to him that the local disease depends on such and such a general condition? These are serious questions, and it is fully time that we stated definitely just what we mean. In discussing these questions I shall simply state my views with the purpose of arriving at some definite conclusion as to the course to pursue.

It is a well-known fact in all branches of human knowledge that the more distinctly a man is a specialist, the less his opinion is worth about general questions, and often about subjects intimately connected with his own specialty. If this is so in the exact sciences, how much more is it likely to be true in medicine? There are several reasons why, in my opinion, the specialist is not as well qualified to make a diagnosis and, therefore, to treat the general condition. The first of these is the fact that he sees most diseases through the medium of his own specialty; secondly, he often does not have the requisite training, and if he has it he soon gets out of touch with the subject of general medicine; thirdly, he does not keep touch with the literature of general medicine; fourthly, he does not have at his command the necessary instruments of precision; fifthly, the patient comes to him for another purpose and does not volunteer information with which his family physician is perfectly familiar, and, lastly, he does not take the necessary time to investigate the functions of the different organs and to obtain a complete history of the general health. It is only by such a painstaking investigation that an accurate diagnosis can be made.

On the other hand, the specialist often sees the local manifestations of disease conditions which may have been overlooked and which perhaps the family physi-

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. George L. Richards, O. Joachim and G. V. Woollen.

cian has had no opportunity to investigate. It has been my experience that the general practitioner is usually grateful for the light which our examination may throw on a case. The very ease with which we are able to make a diagnosis of some general diseases by their local manifestations leads us into the error of thinking that we are able to diagnose with equal ease all the diseases of the body. In reality, the diseases which we are able to diagnose from local manifestations are very few, and they are often far advanced before the local characteristics are sufficiently marked to enable us to arrive at definite conclusions. We form impressions of cases, but we should bear in mind that clinical impressions are not always clinical facts. To make a diagnosis of systemic disease requires time and patience, a thorough knowledge of clinical medicine, the necessary instruments of precision, and constant practice with the privileges of a large clinic. Are we prepared for this work? The papers in which the systemic factor is most strongly insisted on do not present internal evidence that this course has been pursued, but, on the other hand, the papers abound in vague illusions and loose generalities until we find ourselves in the position of the lady who had been discussing the subject of the future state with Dr. Johnson: "She seemed desirous of knowing more," says Boswell, "but he left the question in obscurity."

A statement that the general health should be attended to without any suggestions as to what conditions may, or do, unfavorably affect the so-called catarrhal disease of the nose, throat or ears, is not of much use as a practical guide. Do we mean to say that the local lesions are caused by the general condition, or do we mean that they are only made worse by it. If the systemic condition is an important etiologic factor in the production or continuance of the catarrhal diseases of the upper air tract, then it is high time that we should have some definite knowledge of the subject. We should know what diseases act as causes and in what way they so act.

So far as one is able to judge from the writings of the men who make the claim of systemic influence, they attach a great deal of importance to the form of intestinal absorption that goes by the modern name of uric acid poisoning. I do not deny the existence of the condition, but this is hardly the place to enter into a discussion of whether uric acid has anything to do with it. Those who are firmly convinced that it does would do well to read the paper by the President of this Association on the subject. Whatever the etiology of the condition, the question for us to decide is how much of a factor is it in the production of local disease in the nose, throat and ears. There is no doubt that every secreting surface in the body participates in the effort to eliminate these poisons, and the nose and throat, having secreting surfaces, share in this effort. This is manifest by increased secretion and local irritation, which should, and probably does, continue while the process of elimination is going on, but should not continue after elimination is completed. It may be urged that many of these patients are in a state of chronic poisoning, but this is not usually the case because it leads to such a degree of ill health that some effort is made to correct the condition. If no effort is made by the patient, Nature usually takes a hand and helps to correct it. After granting all that may be caused by intestinal absorption, it must be admitted that the term uric acid poisoning has answered as an explanation of a good many things which we did not understand. It is a notable fact that as we know more of any subject we are less likely to seek for an explanation of any obscure condition from this source. It is safe to claim that uric acid does not offer an explanation of chronic catarrh of the nose, throat and ears, and that we must seek for other etiologic factors. The question is what other diseases do have an influence. The diseases which we shall discuss are perhaps not all that may serve as etiologic factors, but will give an indication of what we have to deal with and of some things that had better be let alone so far as we are concerned.

Syphilis and tuberculosis we have always with us, and when the lesions are located in the upper air tract they may very properly be treated by the specialist. Nephritis and diabetes, as well as leukemia, may have local manifestations in the nose, throat and ears, but the only relief which these patients obtain is from the treatment of the general condition.

The sequelæ of the diseases of childhood, the eruptive fevers, influenza and pneumonia, may include not only suppurative diseases of the ears, but also catarrhal disease of the upper air tract. If we were able to trace most of the cases of catarrhal disease of the upper air tract to their source, I believe that we should find that most of them originated in the diseases of childhood or in the infectious diseases. It is believed by many otologists that most of the cases of ear disease originate in childhood, and that if a person escapes ear disease until he is 20 years of age that he will, barring accidents, escape during life. I believe that the same statement holds true in regard to the catarrhal diseases of the nose and throat. Included in the list of accidents are the inflammations which may occur during the course of the infectious diseases. It is worthy of note that persons with perfectly healthy upper air tracts are not so liable to these accidents as are those who already have disease there. These sequelæ furnish by far the largest class of cases with which we have to deal.

It has been claimed that anemia and malnutrition from whatever cause are potent factors, but how far this is so is a mooted question. It is, however, extremely doubtful if they ever act as a primary cause. Disease of the upper air tract is often a potent cause of malnutrition, but it should not be forgotten that malnutrition and catarrhal disease may be associated in the same patient without either having a direct bearing on the other. It is often a very complex question which we have to decide, still it is always well to bear in mind that catarrhal disease may be, and often is, a source of ill health.

It has been claimed that there is no special pathology for aural disease, and the same may be said in regard to the diseases of the nose and throat, but, notwithstanding, we have in the chronic diseases of the nose, throat and ears a condition which, with one exception, we do not find in other parts of the body. This peculiarity is not due to a different etiology or pathology, but rather to the anatomic construction and the functions of the regions under consideration. The acute inflammations are due here, as in other parts of the body, to bacterial infection, and the chronic conditions are the sequelæ of the acute attacks. The exception noted above is a disease of the ribs following pleural empyema, which closely resembles that most hopeless of all ear diseases, spongifying degeneration of the labyrinth. The disease of the ribs is undoubtedly the sequel of the pleural inflammation, and, for anything that we

know to the contrary, the disease of the temporal bone may be the sequel of an acute inflammation. In fact, we know hardly anything about the disease as yet, except that we are able to recognize it and have studied the condition of the bone after death. So far, any treatment which has been employed has been absolutely without effect, and this does not argue an extensive knowledge of the disease.

Progressive deafness is rarely influenced by rheumatism, and almost never associated with deforming arthritis. Patients with progressive deafness are not more liable to have deforming arthritis, and patients who suffer from deforming arthritis rarely ever have trouble with their ears. It would seem that the two diseases should be more often associated if there were any connection between them.

We have to deal with a disease which is persistent and often progressive, and one that does not depend on the systemic condition only in a general way, at least we are not able to claim that it depends on any definite systemic condition. To what, then, can we ascribe the chronicity of these cases? The explanation of this is found chiefly in the anatomic construction of the parts. We have here a large number of cavities which, when once they are infected, are not easily healed. Spontaneous recovery is slow because the drainage is not good even when there are no deviations from the normal anatomic construction, but we often have to deal with more than the usual amount of obstruction either by reason of faulty construction of the parts or as a result of disease. If we add to these causes focal disease within the cavities and the difficulty and often impossibility of direct treatment of the cavities we shall find a sufficient explanation of why these cases run a protracted course.

From all this I do not wish to be understood, for a moment, as claiming that it is not necessary for the specialist to have a thorough knowledge of general medicine. The more medicine the specialist knows the safer patients will be in his hands, and it is not only necessary to be a thorough student of medicine, but it is also necessary to have practiced general medicine. The practice of general medicine broadens one medically and intellectually, and while it is true that when he enters special work he soon loses that delicate touch with general medicine which enables him to form a true estimate of the general health, still he never grows so narrow medically or mentally as he would have done if he had never had the practical training in general medicine. Those who have become good physicians before they become specialists are not usually the ones who attempt to treat the general condition, because they realize how difficult it is for one who is out of touch with general medicine to make a diagnosis of the systemic condition. We have, then, so far as we are concerned, a local condition with which to deal, and we shall be doing a service to our patients when we refer them to their family physicians for treatment of any condition of ill health which may exist. If, however, the local disease is caused by the systemic condition, I can not help feeling that the patients are in a serious situation, because the specialists, as I have attempted to show, are out of touch with general medicine, and are, therefore, unable to treat successfully the general health, and the general practitioner, either from lack of training or because he is too busy, can not carry out the local treatment which experience has shown is beneficial in these cases. The ideal specialist would be the general practitioner who has had a thorough training in that particular branch of special work, but it is hardly possible, under present conditions, for such a one to receive the support of the profession. If we keep constantly before us the fact that all special work is only an adjunct to the work of the family physician and labor intelligently with him for the single object of relieving our patients, we shall have the satisfaction at least of knowing that we have done all that it is possible for us to do for them.

DISCUSSION.

DR. SARGENT F. SNOW, Syracuse—The relation between systemic disorders and local affections of the head is one of the points that determines the success of the treatment of chronic catarrhal affections. A specialist who treats chronic catarrhal affections of any organ and does not recognize the influence of systemic conditions, is in a bad way, and so are the patients that may come under his care. I thoroughly agree with Dr. Cobb that there are many things to prevent the specialist from doing for these patients as he would like, but he must not be too technical and draw his lines too fine. It has been my experience that no case of advanced deafness or advanced catarrhal states depends on local conditions alone. A bad case of catarrhal disease of the ears or throat is probably associated with some systemic disorder or some great fault in personal habits. Bad liver and intestinal disorders will produce congestions of the head membranes just as surely as will bad habits and exposure of the body or keeping the skin tender by hot baths, etc. Local morbid nasal states must be taken care of, but on that alone we must not rely if we expect to help our chronic cases.

DR. GEORGE E. SHAMBAUGH, Chicago—I agree heartily with the essayist. I believe medicine has to-day arrived at a point where no man can understand all about medicine. Internal medicine itself is just as much a specialty as is the study of the nose, throat and ear. We usually discredit a man who presumes to treat all the specialties as one who goes beyond his bounds and can not do anything thoroughly. So the specialist who attempts to treat general diseases makes a mistake. I believe it is best to be in very close relation with the family physician in these cases. The better class of general practitioners recognize specialism and heartily co-operate with us in our work.

DR. D. A. KUYK, Richmond, Va.—In the future we will have fewer ready-made specialists than we have had in the past; they have been chiefly the result of faulty instruction in the colleges. As our knowledge increases our courses increase and become more intensive. I impress on my students the importance of thorough medical knowledge. A man should not undertake to practice a specialty until he has had from five to ten years of general medical practice. Then, when he finds his adaptability to a specialty, he may go into it. The specialist of the future will be a better prepared man. I look on these local conditions largely as manifestations of general conditions. No medicine can possibly approximate the result we get in many cases from exercise. If we keep our oxygenation, combustion and elimination in good condition, we will often be able to defy the micro-organisms.

DR. W. SCHEPPEGRELL, New Orleans—The trouble is not so much that the general practitioner attempts to practice this specialty as it is that he ignores it. As an illustration, a child had been treated eighteen months for malarial fever, of a recurrent type and had been given quinin in large quantities and had been sent to places where malaria did not prevail, all to no avail. She had a discharge from the nose, and when the patient came to my office I removed a rhinolith which had caused considerable irritation of the tissue of the nostril, and the discharge of pus and from its absorption, the fever. The child was well in a few days. On one occasion I was about to perform a tonsillotomy. The child was very nervous and had some symptoms of fever. I asked if the child had been ill, but was told that it was only nervous. The nurse found the temperature 101.5 F. I declined to operate. I did not see the

mother until three weeks later. She then told me that the day following the visit to my office, the child's face enlarged with mumps. If I had operated the swelling would have been ascribed to the operation and not to the mumps.

DR. CHARLES H. BAKER, Bay City, Mich.—Undergraduates have not had proper training in the specialties. The general practitioner is not sufficiently alive to those conditions, which —if he recognized them even though he did not treat them— would redound to his credit and would strengthen him. Frequently men have sent cases to me without a diagnosis or with a diagnosis as likely to be wrong as right. But the general practitioner makes himself stronger in the esteem of his clients when he recognizes these cases and sends them to the specialist. The men who are the most successful practitioners are also the men who are in the closest touch with the specialists. Sometimes cases are sent by men who are absolutely incapable of giving the necessary general treatment, and then it becomes a very serious question whether we should overstep the bounds of our specialty that treat the general conditions when necessary. In such cases, if I had sufficient influence with the general practitioner, I give him suggestions along from time to time but do not hesitate to give the patient necessary treatment to secure results.

DR. O. JOACHIM, New Orleans—Just as we need the knowledge of general surgery, we need also a knowledge of general medicine in order to treat the general conditions of these cases. I have found, as has Dr. Cobb, the greatest willingness on the part of the physicians to second our efforts, and they are glad to have us make suggestions and give them points, and sometimes to the betterment of the patient they can show us points. I have known patients to leave the specialist, and under general treatment by the general practitioner receive benefit which the specialist was not able to give. The laity and the physician often speak of "catarrhal" diseases, which is a very unmeaning term. We have more precise terms than "catarrhal diseases," and we should eliminate this term as far as possible from our discussions, except when referring to the diseases to which a catarrhal process strictly relates.

DR. H. W. LOEB, St. Louis—Of course, the more knowledge a man has before he becomes a specialist the better he will be. A few years ago I looked into the general treatment of chronic pharyngitis and found some thirty different plants. The majority referred to the treatment of the stomach. Then I looked up the treatment of the stomach diseases and found a great number of conditions which I did not understand, and concluded that I for one could not treat the general condition in these cases intelligently. I am sure Dr. Cobb feels as I do, that there should be considerable limitation in the treatment of the general condition. The point especially to be brought out is, not that the general practitioner does not send to us the cases often enough but rather that we do not send our cases to the general practitioner often enough. In that way we often fall into error.

DR. CHARLES W. CRUMB, Utica, N. Y.—This question is of great importance to me, because with a large country district surrounding, I have many cases sent by the general practitioner. In some cases I have a great deal of trouble with the general practitioner. For instance,, take a case in which I am sure there is a specific element, if I say to the general practitioner that it is a specific case, he will often say that he knows from the history that it is not. Often we can not impress on them that certain cases are specific. What shall we do? Shall we let the patients go back and have recurrences or shall we treat them?

DR. GEORGE L. RICHARDS, Fall River, Mass.—I think it is entirely a question of tact and common sense. When the patient comes to me for treatment he is entitled to the best I can give him, and if that requires a correlation with the general practitioner he ought to have it. But many cases come to the specialist of their own accord. Sometimes other things than spraying are required, and if a prescription is necessary I think he ought to have it. The patient has some rights and he should not be required to go back to the general practitioner for a prescription and pay two fees. The general practitioner is in the best of relations with me and we work together. But if I find a general condition accounting for the nose or throat condition, I frequently prescribe for it. But, of course, I would not treat general conditions, such as mumps, etc. Nor do I send every case to the general practitioner for a dose of calomel when that is required. When you have a case sent to you for diagnosis and initial treatment you are compelled to return the case to the general practitioner, by the requirements of ethical conduct. A little tact and common sense will take care of this whole subject, and it seems to me we are largely threshing a man of straw here.

DR. C. M. COBB, Boston—The statement of Dr. Richards does not seem to cover the ground. We are often told that the catarrhal diseases, at least in certain cases, depend on a constitutional disease or condition. We want to know just what it does depend on, what the constitutional disease or condition is. Unfortunately there is too often a feeling of distrust on the part of general practitioners toward the specialists. They consider them to a certain extent rivals in business. The patients do come to the specialists often of their own accord and the specialist will give them general treatment, for instance, a dose of pepsin or something for indigestion and they will be all right. Now, are we justified from the simple statement of the patient to go ahead and prescribe for him? I do not think we are. Not long ago a man came into my office with some trouble with his nose and throat and I found he had too much other trouble, and I asked his family physician's name and sent him to his physician. Another patient came to me and I treated him once and he recovered. He came back again because of pain, but I could find nothing in the way of a local disease, and I sent him to his family physician with a note saying that something was poisoning the patient, but I did not know what it was. The physician later told me that it was a case of malaria. I do not suppose that would occur here, but it did occur in Massachusetts. The trouble with the specialists, as well as with the general practitioners, is that they often attempt to do things they can not do. In one case I was firmly convinced that the patient had hay fever. She came once or twice. Later I saw the family physician and he said she had had convulsions, and an examination of the urine showed chronic nephritis, from which she died. If she had complained to me of anemia or some condition of the stomach I might have given her something that possibly would do no harm or that possibly might have done harm. If the general practitioner will say it is a simple case, all well and good, but if we are to say a case is simple or serious it is a very different thing. The patients often say that they have such and such a physician for simple things, but if there is anything serious they have somebody else. I do not know how they determine whether it is a simple or a serious disease. Ninety per cent. of our cases are of local origin, if we take out of consideration syphilis, tuberculosis and the malignant diseases. Often it is better for us to look the cases over, for sometimes the general practitioner may make mistakes. But he is not so likely to make mistakes about the general conditions as we are. Of course, we all at times make mistakes. Sometimes the patients come to me and say they have no confidence in their general practitioner. I think the specialist will do better if he will stick to the patient's family physician, for it is not our business to pick out their family physician. We should remember that catarrhal disease means no particular disease. After the local disease is treated, usually the diathesis or catarrhal disease disappears.

A Case of Nutmeg Poisoning.—According to *The Lancet*, a young woman took, to restore the menses, a whole nutmeg grated in a wineglass of gin. The monthly flow had been delayed two weeks, and the patient feared pregnancy. Convulsions ensued and the patient was found in collapse by the medical attendant. General condition began to improve in about an hour after treatment was begun; her stomach was thoroughly emptied. She remained in muttering delirium for one night, slept heavily the next day and awoke fully recovered.

THE EARLY MANIFESTATIONS OF LARYNGEAL TUBERCULOSIS;

THEIR FREQUENCY AND TREATMENT.*

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The early rather than the late manifestations of laryngeal tuberculosis are chosen for consideration because the lesions of the advanced stages are self-evident, and our services to such unfortunates are but meager and palliative, while the earlier lesions are more difficult of recognition, but may be, by perseverance, occasionally checked and possibly eradicated.

It is not the scope of this paper to discuss the etiology of laryngeal tuberculosis, nor whether it is occasionally primary or invariably sequential to pulmonary tuberculosis, nor whether, as a sequela, the invasion is endogenetic or exogenetic, but rather to consider the pathologic changes prior to the ulceration.

It has been my custom to examine the larynges of subjects of pulmonary tuberculosis with a view to ascertaining the condition of the larynx prior to the characteristic tumefactions and infiltrations. The great majority of these subjects have a subacute or chronic laryngitis which does not differ in laryngoscopic appearance from a laryngitis of diathetic or climatic cause. There is either uniform thickening of the mucosa or an irregular thickening and hyperplasia of reddish hue of the ventricular bands and arytenoid commissure, presenting dilated blood vessels and covered with thick, grayish mucus. This laryngitis persists notwithstanding the ordinary treatment for such conditions and is principally dependent on the tubercular dyscrasia. The fact that such larynges are often constantly irritated by pus may be a most potent factor causing its persistence.

Notwithstanding the opinion of Bosworth to the contrary, there seems to be ample proof that the laryngitis in pulmonary tuberculosis is predisposing to the laryngeal tubercular invasion, although the laryngitis itself is probably due to the tubercular dyscrasia and the concomitant cough. Solis-Cohen says that "a predisposition to catarrhal inflammations of the mucous membrane may be regarded as the chief cause of laryngeal tuberculosis," that "many of the chronic cases begin with subacute catarrh which can not be distinguished as peculiarly precursory to laryngeal tuberculosis either by subjective symptoms or by laryngoscopic inspection," and that "in the primitive cases a severe exfoliative laryngitis is the direct predisposing cause" and affords entrance to the tubercle bacillus.

This chronic laryngitis, neither pathognomonic nor characteristic of tuberculous laryngitis, is, nevertheless, the initiative step in the great majority of cases to that lesion, and should be considered as possibly leading to a serious complication in any pulmonary case. We would concede the fact that there may often be a laryngitis in a tubercular patient from other diathetic cause, bearing no sequential or etiologic relationship to the tuberculosis, and also that even many such ulcerative larynges are non-tubercular.

In keeping with the foregoing it has been my observation that three-fourths of the pulmonary patients have some nasal stenosis, and seemingly at variance with the opinion of Fletcher Ingals that the nasal catarrh protects rather than predisposes to pulmonary tuberculosis is the fact that the majority of the laryngeal cases have septal or turbinate deformities.

The acute form of laryngeal tuberculosis usually begins when softening has taken place in the lung and when the laryngitis has reached its crisis. Anemia of the parts is not present and the first sign is a hyperemia which may last days or weeks, following which are the multiple erosions on the laryngeal surface of the epiglottis and arytenoids with, or soon to be followed by, tumefaction in the epiglottis or aryepiglottic folds. These erosions may simulate very closely aphthous ulcerations and are distinguished principally by their multiple character. They eventually enlarge, grow deeper and coalesce, and may precede or occur on a tumefaction, or the latter may develop and remain without an erosion or ulceration.

The chronic form usually begins with an anemia in the arytenoid commissure, arytenoid bodies, ventricular bands or epiglottis, and presents a homogeneous and smooth yellowish-gray color of the intumescent membrane. There may be the so-called mottled appearance caused by spots of deeper hue. This pallor may be a part of a general anemia, and is sometimes present throughout the respiratory tract unassociated with any laryngeal lesion. In either form the parts become thickened early, presenting an infiltrated interarytenoid space, a club-shaped arytenoid or a turban-shaped epiglottis, and later there is sometimes thickening of the parts adjacent to these, especially if there are subacute attacks of laryngitis. An infiltrated ventricular band may obscure a portion of a thickened and congested cord or the latter may be involved in the general pallid edematous condition and yet show in contrast congested blood vessels. The bands may show a nibbled appearance of their edges, and the same may be true of the cords, especially on and near the processus vocalis, where the condition is difficult to detect.

The local subjective symptoms of the early stages may be wanting or simply those of a chronic laryngitis. There is usually a hacking cough, pricking, itching and dryness of the throat, hoarseness and later aphonia and occasionally dysphagia. The cough is distinctly laryngeal unless the repeated hackings induce a spasmodic and expulsive deep cough, but the effort is primarily to free the larynx from the tickling and dry sensation.

The impairment of the voice depends on the nature, location and extent of the lesion. In the chronic cases there may be constant hoarseness which may tend to clear up after a meal, or the drinking of liquids, and yet a large per cent. shows no hoarseness in this stage. If the lesion is in the interarytenoid space there sometimes occurs a diphonic voice.

The pitch limits are also affected, but usually the upper suffers more than the lower. The volume may be markedly affected, the immobility of the parts necessitating a forced expiratory act to start the cords vibrating, and even then weak phonation results. One or more words of a sentence may be whispered.

Odynphagia is seldom present in the pre-ulcerative stage, but may occur when the epiglottis, aryepiglottic folds, or the posterior portions of the larynx are involved.

The diagnosis of secondary laryngeal tuberculosis depends on the tubercular history, symptoms and signs. A persistent, chronic laryngitis with the supervention of hoarseness or a weakening of the voice is always suspicious. In the primary cases the attack usually dates

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. George L. Richards, O. Joachim and G. V. Woollen.

back to a severe cold, and the hoarseness is more marked than in the secondary cases. In any case, while the symptoms are of value, the diagnosis will mainly depend on the laryngoscopic appearance. Von Ziemssen doubts the possibility of recognizing the lesions laryngoscopically, yet Lennox Browne considers the laryngeal picture as characteristic. A tubercular lesion presents an infiltration of the mucosa proper, an exsanguination and a diminished secretion. The color is a shining grayish or yellowish pink and the location is usually in the interarytenoid space, arytenoid bodies, ventricular bands, epiglottis and vocal cords. The interarytenoid space at first shows only a thickening, but later a roughened convexity anteriorly. The arytenoid bodies and aryepiglottic folds become club-shaped to the extent of obliterating the Wrisberg and Santorini prominences. The infiltrated ventricular bands may obscure the ventricles and often cover the cords, and the latter, especially the processus vocalis, quickly become congested and nibbed by erosions. The turban appearance of the epiglottis seldom appears in the early stage, but usually follows after other parts have broken down.

The evening pyrexia, anorexia, small and rapid pulse and cough assist in diagnosis.

The presence of the tubercle bacillus can not be regarded as of diagnostic value except as being indicative of a lesion somewhere along the respiratory tract.

The course of the disease depends much on the general condition, the extent and course of the pulmonary lesion, if such exists, the nature and location of the laryngeal lesions, the co-existence of syphilis, and on the treatment. The acute and miliary forms are rapidly fatal. The prognosis in the chronic cases is also, of course, unfavorable. As a rule, the laryngeal condition keeps full pace with that of the lung. In a few cases under favorable conditions and where the physical resistance is good the infiltrations or even the tuberculomata may remain indefinitely or disappear, especially under persistent appropriate treatment and climatic influence.

Of the greatest importance is prophylaxis, especially in those suffering from pulmonary tuberculosis. Aside from the general treatment indicated for the tubercular dyscrasia, there should be, at intervals not exceeding one month, a careful laryngoscopic examination made and, at the first indication of a laryngitis, appropriate treatment should be begun. By this is not meant a routine spraying, but each patient having anything but a normal larynx should have whatever treatment may be necessary for the condition present. Fewer laryngeal complications to pulmonary tuberculosis would ensue if this were done.

Overuse of the voice, faulty phonation and needless hacking and scraping the throat, much of which is a habit rather than a necessity, invite the inflammation.

Nourishment is of prime importance, and to this end forced feeding within physiologic limits, with moderate open air exercise and abundance of sunshine is necessitated. The greater part of the twenty-four hours should be spent out of doors. Regulated long hours of sleep in a cold, southern-exposed room with open windows, barring direct drafts, are essential.

The effect of climate is disappointing as directly influencing the local lesion, but indirectly, acting on the general predisposition, is second in importance to nourishment. The greatest number are benefited by a climate of moderate temperature and of medium hygroscopic conditions, in an elevation from 2,000 to 3,000 feet. Air free from dust and gases of the cities, purified by moderate winds and rainfall and an abundance of sunshine has proven beneficial to many having laryngeal complications in whom the process is either arrested or cured. The warm, moist climate of lower elevation is better suited to a few who are not enervated thereby.

The voice should be completely suspended in the acute form or during an acute exacerbation of a chronic case. To facilitate this, which is difficult to accomplish, a pencil and pad should be used by the patient and his necessary communications written thereon, and during the greater part of the day he should be left alone, thus eliminating the temptation of speaking. In the less severe cases moderation of the voice and in the amount of speaking should be insisted on. In no case should singing or reading aloud be permitted. Many patients have a faulty mode of speech specially fatiguing to the larynx. The effort is laryngeal rather than from the chest, and often an affected voice from habit must be contended with.

There is too much routine spraying and inhaling treatment in vogue, throwing into the larynx variously combined oils and liquids, many of which are not only non-solvent but actually coagulating to the secretions and instead of cleansing and soothing often form a tenacious, irritating mucous coat nauseating to the patient. The principles of treatment are not unlike those in other lines of surgery, cleanliness being the prime factor. If the parts are covered by tenacious mucus or debris a bland solvent such as a solution of sodium bicarbonate, sodium chlorid, sodium biborate or sodium sulphate should be gargled, sprayed or applied on a cotton sponge thoroughly but quickly with the least possible irritation to the parts. The patient should not be requested to assist in dislodging retained secretion by repeated coughing or hawking for the effort is too fatiguing for an organ needing rest and induces hyperemia. After the cleansing process, the inflammatory condition should receive such treatment as is indicated, and usually astringents, solutions of zinc chlorid, tannate of glycerin, creosote and iodin, pyoctannin and silver nitrate on a cotton swab are most efficient.

Any pathologic condition of the nose and pharynx should receive appropriate treatment. Not only that the pulmonary patient may be able to supply his lungs plentifully with air, but that the larynx may be the recipient of air properly warmed, filtered and moistened, every nasal and pharyngeal stenosis should be reduced, and to this end no moderate degree of cachexia will contraindicate the removal of septal spurs, or deflections, hypertrophied turbinates and adenoids, for the increased oxygenation will more than compensate for any debilitation resulting therefrom. Such measures are to an extent prophylactic to tubercular laryngitis.

There is much diversity of opinion as to the indications for local treatment of the pre-ulcerative conditions. Theoretically, stimulants to the anemic and sedatives and astringents to the hyperemic areas are indicated, and my clinical experience conforms to this. Where there is a general anemic condition of the larynx and a beginning tumefaction, a stimulating spray of 20 per cent. menthol in liquid vaselin, or 50 per cent. guaiacol in olive oil will tend to restore the capillary circulation. Propelling sprays with hot instead of cold air adds to their efficiency.

As the tumefaction advances an application of iodin, creosote and potassium iodid in glycerin and water often has an absorptive action. The erosions and incipient ulcerations respond better to strong solutions of lactic acid than to any other application. Creosote 20 per cent. in albolin, pyoctannin and iodoform powder are also effective. It is needless to say that the mirror should guide the hand in all applications.

Intralaryngeal injections often serve well for both the general dyscrasia and local lesions.

Submucous injections have not with me proven satisfactory. The method of scarifying the tumefaction is, I believe, contraindicated. In certain selected cases where the infiltration is localized and accessible, especially in the so-called primary cases, thorough curettement followed by carbolic acid or lactic acid is permissible.

DISCUSSION.

DR. M. P. SCHUSTER, El Paso, Tex.—I am located in a place that is supposed to be inimical to this condition, and I have about fifty cases. The cough and the dyspnea are very great in these cases. While the average expectation of life in tubercular cases has been given as three years, laryngeal tuberculosis reduces it to two years. There is a premonitory stage without laryngoscopic symptoms. I have seen two cases in which I was sure tuberculosis was coming on, but I could not establish this by microscopic or laryngoscopic examination. Later the trouble became manifest. In a young man the only manifestation was that he would have a severe spell of coughing, resembling the staccato cough of whooping cough. Sometimes its intensity would lead to vomiting. I was very much gratified to find this fact emphasized in Brouardel's "Traité de Médecine," that a cough with only a small amount of expectoration, accompanied often by vomiting, should lead one to suspect tuberculosis. I have the impression from the literature and my own experience that there is very little primary tuberculosis in the larynx. If it is present it does not produce those infiltrated and deeply ulcerated spots but only little nummular ulcerations that are more amenable to treatment. I was glad to hear Dr. Briggs state that the appearance is hyperemic, for the books often say it is anemic, and my experience is that it is more often hyperemic. The dysphagia comes on most frequently when there is involvement of the posterior periphery, especially the club-shaped infiltration of the arytenoid bodies and also in the infiltration of the interarytenoid fold. After treating patients for four years and trying to avoid local treatment, I have come to the conclusion that we had better treat locally because there is considerable relief secured. For instance, in dysphagia, the dusting with orthoform will enable patients to take their meals. I would like to know Dr. Briggs' proportion of cures. In the literature and in my own experience cures are exceptional. The ulcerated cases are more amenable to treatment than the cases with unbroken surface. You can cure up an ulcer with the persistent use of lactic acid and the curette, usually, but it is not a cure of the laryngeal trouble, for it recurs somewhere in the larynx. The most hope of absolute cure may be entertained where the lung process has stopped definitely.

DR. H. H. BRIGGS—Of course, in the strictest sense of the word, I believe no case is cured. But with close observation and control of every detail one may enable a patient to live almost indefinitely—at least in many cases, for a number of years. In such cases there usually remains cicatricial tissue, tumefaction or tuberculomata, which under lowered vitality and unfavorable conditions may break down.

Dietetics.—The feeding of patients is really as important, if not more important, than the drugging; yet the majority of medical students have to learn their dietetics in the school of bitter experience. The physician must utilize better the so-called forces of nature, and see to it that all the details of the patient's food and environment work for recovery.—*Jour. Kan. Med. Society.*

THE VASOMOTOR SYSTEM OF THE PULP.*

EUGENE S. TALBOT, M.D., D.D.S.
CHICAGO.

In 1733 Stephen Hales[1] first published the idea that small arteries changed their caliber. He devised the following ingenious experiment: Tying a brass tube into the aorta of a dog and employing a head pressure equal to the normal aortic tension he injected water and measured the outflow per minute from the divided vessels of the intestines. He found that cold water diminished the flow, while hot water increased it. He also showed (by the action of drugs) that one set of agents contracted the vessels and lessened the outflow, while another set widened the vessels and increased the flow.[2]

The chief dominating center of the non-striped muscles of the arterial system with motor nerves (vasomotor, vasoconstrictor, vasohypertonic) lies in the medulla oblongata. The nerves which pass to the blood vessels are known as the vasomotor nerves. Without mentioning the experiments which have been made, I might say, in a general way, stimulation of this nerve center causes contraction of all the arteries, resulting in great increase of the arterial blood pressure and swelling of the veins of the heart. Paralysis of this center causes relaxation and dilation of all the arteries, resulting in an enormous fall of the blood pressure.[3]

The sympathetic nerves consist of two chains of ganglia, one on each side of the spinal cord. Their function is to stimulate the viscera, glands, heart, blood vessels and unstriped muscles of the body generally.

There are four small ganglia[4] connected with the fifth nerve: the ophthalmic, sphenopalatine, otic and submaxillary. Each has three roots derived from motor, sensory and sympathetic nerves, respectively, and varying members of branches of distribution. These cells are multipolar, thus resembling the cells of sympathetic ganglia and differing from those of the ganglia of the posterior spinal nerve roots and gasserian ganglion.

Each ganglion is a reddish-gray color, soft in consistence but enclosed in a strong fibrous sheath. It is connected above and below by an ascending and a descending trunk and with at least one spinal nerve by one or two communicating branches. Each ganglion distributes different branches which either directly or through the intervention of a secondary plexus supply blood vessels.

The second or superior maxillary division of the fifth pair of nerves gives off the posterior superior, middle superior and anterior superior dental nerves. These three nerves form a plexus and loops of filament which pass to the tips of the roots to form the dental pulp. The third division of the fifth, the inferior maxillary, a mixed sensory and motor nerve, enters the inferior dental canal, passing forward toward the symphysis menti supplying branches to the teeth and gums.

The gasserian ganglion receives filaments from the carotid plexus of the sympathetic. Connected with the fifth are the four small ganglia already mentioned which form the whole of the cephalic portion of the sympathetic. With the first division is connected the

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* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Stomatology, and approved for publication by the Executive Committee: Drs. M. L. Rhein, M. H. Fletcher and Wm. E. Walker.

1. Statistical Essays, 1733, vol. xi.
2. A history of some of the experiments from this period to the present time may be found in Text-Book of Physiology of E. A. Schäfer.
3. Landois and Stirling: Human Physiology.
4. Gerish: Anatomy.

ophthalmic ganglion, with the second submaxillary ganglion. All the four receive sensitive filaments from the fifth, motor and sympathetic filaments from various sources. The ganglia are also connected with each other and the cervical portion of the sympathetic.

According to the "American Text-Book of Physiology," the vasomotor apparatus consists of three classes of nerve cells.[5] The cell bodies of the first class lie in sympathetic ganglia, their neuraxons passing directly to the smooth muscles in the wall of the vessels; the second are situated at different levels in the cerebrospinal axis, their neuraxons passing thence to the sympathetic ganglia by way of the spinal and cranial nerves; the third are placed in the bulb and control the second through interspinal and intercranial paths. The nerve

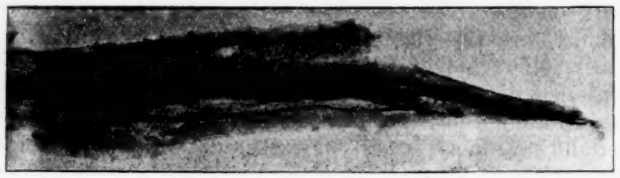

Fig. 1.—Nerve fibers torn from main nerve trunk and entering the canal through the apical foramen. ×50.

cells of the first class lie wholly without the cerebrospinal axis, the third wholly within, while the second is partly within, partly without, and binds the remaining two together.

The vasomotor fibers for the face and mouth have been found in the cervical sympathetic by Dastre and Morat, leaving the cord[6] in the second and fifth dental nerves and uniting (at least for the most part) with the trigeminus by passing, according to Morat,[7] from the

Fig. 2.—Bundles of nerves in the pulp showing vasomotor system. Nerve fibers encircling an artery showing terminals. ×50.

superior cervical sympathetic ganglion to the ganglion of Gasser and thence to the fifth nerve. The nerves of the cerebrospinal system, with the exception of the olfactory, are medullated nerves.

The vasomotor nerves are axis cylinder processes of the sympathetic ganglion cells. They follow for a time the course of the corresponding spinal nerves. Intermingled with the medullated fibers are always found gray or non-medullated fibers. According to Schäfer,[8] these fibers frequently branch; the medullated fibers rarely do except near their termination. The sympathetic nerves are largely made up of these fibers as they approach their peripheral distribution and possess a thin medullary sheath.

From what has been said it will be seen the intimate relation of the fifth nerve is as a motor nerve in mastication and a sensory nerve to the great surface, both external and internal, which belongs to the face and the anterior part of the cranium. From its great size and the large portion of the medulla with which it is connected, there can be no question but that its sympathetic and vasomotor connection is established.

The nerve trunks as they pass through the lower jaw are made up of nerve fibers gathered together into bundles or funiculi, held together by connective tissue and

Fig. 3.—Bundles of nerves in the pulp showing the vasomotor system. Crossing of nerve fibers from one bundle to another. These extend along and around blood vessels. Degeneration tissue at lower border. ×50.

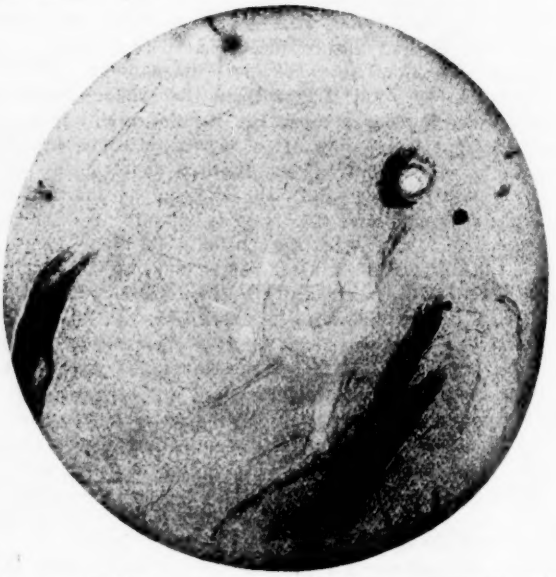

Fig. 4.—Bundles of nerves in pulp showing vasomotor system. Nerves around a crosscut artery. Y-shaped artery in center showing terminals. ×50.

5. By "nerve cells" is meant the cell body, with all its processes, namely, the neuraxons or axis cylinder processes and dendrites or protoplasma processes.

6. Dastre and Morat, 1884, pp. 116-120.

7. Morat, 1889, p. 201.

8. Essentials of Histology, p. 118.

called the perineurium. The connective tissue which unites a number of the bundles or funiculi is called epineurium. The cut ends under the microscope resemble very much the end of an ocean cable; the wires representing the nerve fibers, and the rubber covering the connective tissue sheaths.

Fig. 5.—Bundles of nerves in the pulp showing the vasomotor system. Five arteries with nerve fibers running lengthwise, also cross and long section of artery with nerve fiber around it. Thickening of arterial walls showing terminal nerve fibers. ×50.

From this nerve trunk smaller medullated nerve fibers are given off at the nodes of Ranvier which pass up and into the apical foramina of the roots of the

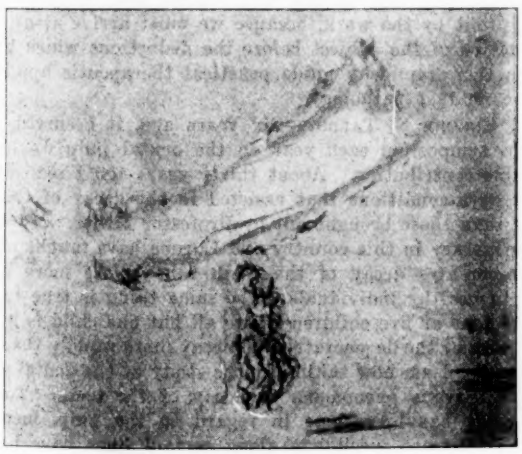

Fig. 6.—Bundles of nerves in pulp showing vasomotor system. Nerve extending along the arterial wall. At right angles may be seen the muscular coat of an artery filled with terminal nerve fibers. ×60.

teeth. Sometimes there are two and again three or ten to twenty-five nerve fibers entering the foramina. The number depends on the size of the opening. In my paper last year on "The Evolution of the Pulp" I demonstrated that in animals whose teeth were in continuous eruption during the life of the animal the pulp was larger at the opening than in the pulp chamber. In ascending to man the second teeth have small openings, especially later in life. In the very nature of things as the root calcifies, especially in exostosis, the openings grow smaller. The number of nerves entering the foramina, then, will depend on the size of the apical opening.

In a general way, the motor, sensory and the sympathetic nerves have been traced from their source to the roots of the upper and lower teeth. Text-books demonstrate the peripheral end organs to other structures of the body. In no case (to my knowledge) has

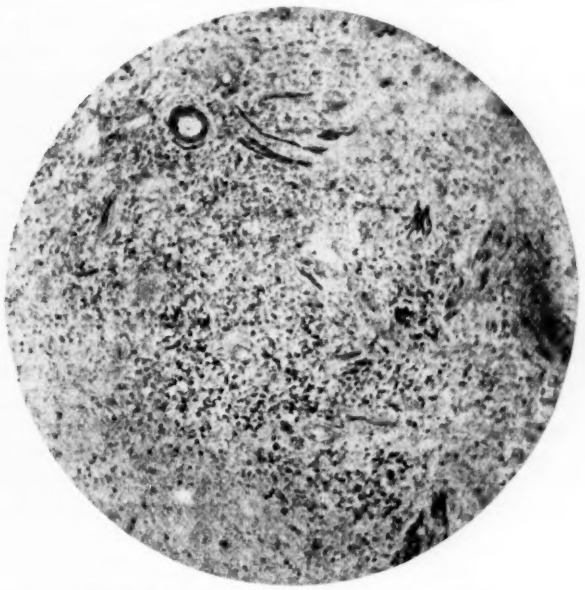

Fig. 7.—Bundles of nerves in pulp showing vasomotor system. Crosscut section showing ends of nerve fibers, also nerve encircling crosscut artery. ×25.

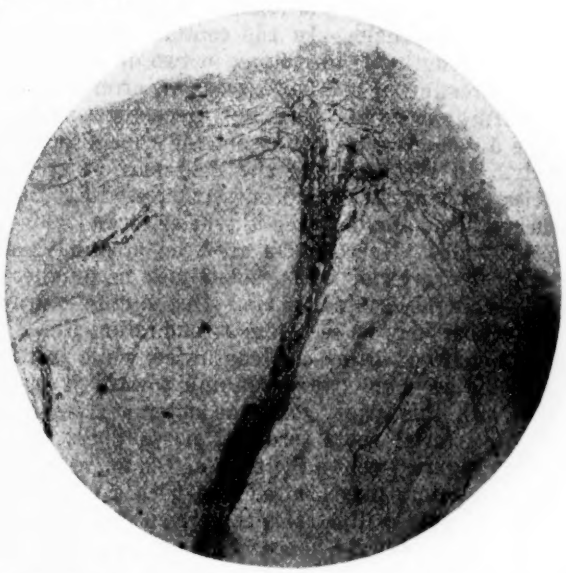

Fig. 8.—Bundles of nerves in the pulp showing the nervous system. These nerves extend to the odontoblastic layer. Small fibers running below and to the odontoblasts forming a nerve plexus. ×50.

the character of the nerves of the pulp been demonstrated.

At the meeting of this Section last year Dr. Vida A. Latham, in a paper, "Résumé of the Histology of the Dental Pulp," showed the nerve supply to the pulp in different forms and also one illustration of the vasomotor system of the pulp. Part of our special work in the laboratory this year has been to demonstrate the character of the nerves of the pulp.

Pulp study has been conducted by Dr. Latham and myself in different laboratories for the past four years. For this work teeth have been collected each day to the number of over 4,000. These have been cracked open and over 2,000 specimens of pulps have been placed in different fluids ready for cutting, staining and mounting for the microscope. All the different methods of preparation of nerve tissue have been used as reported by Dr. Anderson in a paper, "Notes on Pulp Technic."

The nerve fibers, after leaving the main trunk in the jaw, evidently enter the apical foramina in single nerve bundles. In many cases, these nerve bundles continue the entire length of the pulp without branching. On the other hand, the branching in many cases begins after the trunk nerves have passed through the apical foramina. In Figure 1, when the tooth was extracted the pulp protruded from the end of the root, the opening being large. In this illustration the nerve fibers are shown from the inferior dental nerve extending through the apical foramina in the root canal of the tooth. These seem to run in a bundle or funiculi with the exception of one fiber which is isolated at the root. Figure 2 shows bundles of nerve fibers loosely arranged running in different directions. Between these bundles may be seen many single nerve fibers running in all directions. In the center of the field is an artery cut crosswise with terminal fibers encircling it two-thirds around. Figure 3 beautifully illustrates the vasomotor nerves in their relation to the blood vessels. The blood vessels and nerves run in the same direction. In the center of the field may be seen four arteries. Nerve fibers are notably running the entire length between, but they cross and recross at different localities. Nerve fibers in bundles and singly cover the entire field. Figure 4 shows bundles of fibers with many single fibers throughout the field. In the center may be seen an artery cut lengthwise branching in two directions. The most interesting of all, however, is an artery cut crosswise with vasomotor terminal nerves encircling it. Figure 5 demonstrates the vasomotor system more thoroughly. In the center of the field may be seen nine arteries cut lengthwise and one cut crosswise. Bundles of nerve fibers run between the arteries and along the arterial walls. Nerve fibers are seen crossing and recrossing the arterial walls, sometimes in bundles and again in single terminal fibers. In the cross-cut artery a nerve fiber may be seen almost encircling it. Figure 6 shows enlarged artery cut lengthwise, while just below it may be seen an artery running toward it at right angles. In this artery only the outer surface is seen. In both arterial coats terminal nerve fibers are well shown. Figure 7 shows the ends of the nerve cut crosswise. An artery may also be seen with a nerve encircling it. Figure 8 illustrates the crown end of the pulp with a bundle of nerve fibers which have extended intact the entire length of the pulp and is distributing its fibers throughout the odontoblastic layer.

In consideration that the blood vessels and nerves pass through the pulp in a wavy direction and not in straight lines, to have been able to obtain so many beautiful specimens showing so clearly and distinctly the vasomotor system is fortunate.

I am under obligations to Dr. Ludvig Hektoen for verifying these illustrations and to Dr. Martha Anderson for valuable services.

DISCUSSION.

DR. M. H. FLETCHER, Cincinnati—The nerve distribution of the pulp is a subject that has been greatly neglected, and it is a matter of great pleasure to know that it has been taken up by such physicians as Drs. Talbot and Latham, because through these studies one may be able to find out why the pulp is so delicate in its tendency and recedes so easily from any attempt at investigation. The Doctor's work on the anatomy and distribution of the nerves about the vasomotor system will undoubtedly result in knowledge on points now obscure.

DR. T. E. CONSTANT, Scarborough, England—From clinical observation I have for some years been under the impression that the so-called odontoblasts have more to do with the vasomotor system than with dentinification. In my opinion, they have very little to do with the formation of dentin, excepting so far as regulating the blood pressure. They undoubtedly assist, but not in the direct manner in which most English dental anatomists have described.

DR. T. L. GILMER, Chicago—We are greatly indebted to Dr. Talbot for this work, and we must all be pleased with the success he has achieved. The facts are plainly shown by the photographs.

DR. G. F. EAMES, Boston—One can take clinical advantage of the idea Dr. Talbot has expressed. For instance, there is no place in the body where we can see the control of the nervous system over the tissues as much as in the nose. I believe that in many inflammatory conditions of the pulp we may control these conditions in proportion as we understand what treatment will influence the general nervous system. I have had a patient say: "When I am tired I have a pain in my tooth." I hardly realized at the time what that meant, but I can see now how exhaustion of the nervous system will so influence the control of the blood supply in that organ that it will be paralyzed and admit blood, and pain be caused. I can see also how in a subacute inflammatory condition a person whose nervous system has been exhausted may acquire a chronic state of inflammation in the pulp by these fibers being paralyzed, so that the blood vessels themselves become permanently stretched. Therefore these demonstrations have a clinical value.

DR. JULES J. SARRAZIN, New Orleans—I agree that the knowledge may be of great usefulness in a better understanding of physiologic pulp conditions. The paper reveals thorough research, but, in my opinion, we are not yet able to fully profit by the work, because we must arrive at a greater elucidation of the subject before the deductions which may be drawn therefrom may guide practical therapeutic application in the field of pathology.

DR. EUGENE S. TALBOT—Six years ago, it occurred to me that a symposium each year on the dental pulp would be a valuable contribution. About thirty years ago I realized that there were conditions that assisted in the decay of the teeth other than those brought out by Professor Miller. My studies in degeneracy in this country and Europe have taught me that in degenerates decay of the teeth takes place more rapidly than in healthy individuals. The same thing is true in families of four or five children where all but one child is healthy. The teeth of the degenerate child decay more rapidly than those of others. I am now taking up the study of the dental pulp or of the nervous phenomena in decay of the teeth. To bring out what has been done in regard to the pulp, men from abroad who are specialists along certain lines have been invited to read or send papers. They have advanced ideas on certain subjects, and while they may not agree with each of us, yet many new and original ideas have been brought out. Such papers create a good discussion, and assist greatly in elucidating facts. My paper to-day, as I have said, covers work of four years. Mr. Constant has rather anticipated me in the work I have now on hand, which, I think, will bring out certain points in relation to the teeth as suggested by him, and I shall present it very soon. Had I undertaken this work ten or fifteen years ago it would have been impossible to have shown the pictures I have, because modern stains have developed an idea of the terminal structures of the nervous system which was impossible years ago.

THE TREND OF GYNECOLOGIC WORK TO-DAY.

A. PALMER DUDLEY, M.D.

Professor of Gynecology, New York Post-Graduate Medical School, New York; Professor of Gynecology, Dartmouth Medical College, Hanover, N. H.; Surgeon to Harlem Hospital.

NEW YORK.

(Concluded from p. 1452.)

EDWARD J. ILL, NEWARK, N. J.

Total number of cases	66	Left tube removed	25
Left ovary diseased	34	Right tube removed	24
Right ovary diseased	28	Appendectomies	3
Left tube diseased	40	Herniotomy (femoral)	1
Right tube diseased	33	Ventrosuspensions	20
Left ovary resected	13	Vaginal sections	2
Right ovary resected	14	Pregnancies	8
Left tube resected	14	Married	57
Right tube resected	6	Average age	30
Left ovary punctured	3	Recovered	35
Right ovary punctured	1	Improved	12
Left tube opened	4	Not improved	2
Right tube opened	4	Died	1
Left ovary removed	21	No report	16
Right ovary removed	17		

Dr. Ill's report shows most gratifying results, and his average of pregnancies reported (9 in 50 cases) compares favorably with my own.

JOS. E. JANVRIN, NEW YORK.

He quotes no statistics, but expresses a firm belief in the wisdom of preserving the function of menstruation as indispensable to the well-being of his patients.

CHAS. JEWETT, BROOKLYN.

Dr. Jewett, in a material of 62 cases of conservative surgery of the ovaries, etc., knows of but 3 cases of pregnancy occurring subsequently. He believes, especially in the case of young women, that any portion of the ovary which appears to be sound to the naked eye should be allowed to remain.

JOSEPH TABER JOHNSTON, WASHINGTON, D. C.

Dr. Johnston[3] advocated the conservative treatment of the diseased ovary before the Southern Surgical and Gynecologic Association, Dec. 6, 1898.

MATTHEW D. MANN, BUFFALO, N. Y.

Dr. Mann has seen pregnancy follow where the ovaries seemed at the time to be hopelessly diseased; not so with the tubes, however.

W. P. MANTON, DETROIT, MICH.

Number of cases	28	Ovary punctured not stated	4
Married	22	Left tube resected	0
Single	6	Right tube resected	1
Left ovary diseased	13	Left ovary removed	2
Right ovary diseased	23	Right ovary removed	5
Ovary diseased, not stated	4	Left tube removed	2
Left tube diseased	2	Right tube removed	4
Right tube diseased	5	Pregnancies	2
Left ovary resected or punctured	15	Cured or greatly improved, all but 2 or	3
Right ovary resected or punctured	20		

Dr. Manton reports a most interesting case in which he found a third ovary embedded in the vaginal wall at the cervico-vaginal junction. The cysts in this third ovary were removed by vaginal section. In nearly every case reported other plastic work on the genital tract was performed.

His results with two or three exceptions were entirely satisfactory.

SIMON MARX, NEW YORK.

Dr. Marx writes of an interesting case of pregnancy after practically all ovarian tissue had been removed in two consecutive operations.

ROBERT T. MORRIS, NEW YORK.

Dr. Morris has sent me a valuable communication on conservative surgery of the ovary, but as he deals almost exclusively with the question of implantation, I can hardly make use of it in this connection.

3. THE JOURNAL A. M. A., Dec. 17, 1898.

H. P. NEWMAN, CHICAGO.

Total number of cases	86	Required secondary intervention, per cent	20
Resection of ovaries	86	Pregnancies (3 abortions)	8
Recovery, per cent	60	Suspension of uterus or ovaries, per cent	50
Improvement, per cent	20		

Although guarded in his opinion, Dr. Newman is in favor of conservative work, and his report shows most gratifying results.

RICHARD C. NORRIS, PHILADELPHIA.

Total number of cases	42	Relieved by second operation, per cent	15
Controlled by statistics	28	Unimproved, per cent	35
Symptomatic recovery, per cent	20	Pregnancies (in 10 cases)	2
Improvement, per cent	30		

Dr. Norris has but recently read a paper on conservative surgery of the uterine appendages before the Lancaster County (Pa.) Medical Society. His experience in this field extends over some 8 years. The material is confined to hospital work.

Generally speaking, he is the most pessimistic of my correspondents in regard to conservative work. The results, he says, are often discouraging. There appears to be no definite relationship between the amount and character of intervention and the final result, which makes prognosis extremely difficult.

It must be borne in mind that Dr. Norris' views are based on a rather small material—28 cases.

C. D. PALMER, CINCINNATI.

Eighty-eight operations of bilateral oöphorectomy performed since June 30, 1899. All were hospital cases but 5.

Disease: Chronic catarrhal with some interstitial salpingitis, the vast majority of gonorrheal origin, a few only being septic.

Never operates on other than inflammatory cases.

Mortality 4 per cent.

Knows of no subsequent pregnancies.

In 3 cases menstruation persisted for some months and perhaps longer.

Abdominal section, usually preceded by curettage of uterus. Vaginal section in endometritis followed by salpingitis, but rarely did more than wash out cavity of lower peritoneum.

Dr. Palmer, in summing up the results of his work places himself on record as in favor of conserving the appendages, but insists that all the minor plastic work, including curettage of the uterus and even posterior vaginal section for drainage, should first be resorted to.

WILLIAM M. POLK, NEW YORK.

Dr. Polk has had experience with a very large number of conservative cases. According to his recollection, he has operated 273 times. In the absence of documental evidence, his figures are not counted with the actual totals. He only knows of 5 cases of pregnancy. Most of his material consists of charity cases from Bellevue Hospital.

In 1886 Dr. Polk read a paper[4] before the Society of Physicians and Pathologists at Washington in which the subject of conservatism was discussed.

M. F. PORTER, FORT WAYNE, IND.

Number of cases, over	50	Pregnancy	0
Resection or puncture of ovaries and tubes, per cent.	100	Results satisfactory; better in ovarian work.	

JOSEPH PRICE, PHILADELPHIA.

In a report of 100 cases of resection of the ovary it is stated that pregnancy followed in a good percentage of the cases. In some instances only a third or fourth

4. American Practitioner, vol. I, and Med. Record, Sept. 18, 1886.

of the ovary was left. Dr. Price declines to resect the tubes, preferring to remove them entirely.

EDWARD REYNOLDS, BOSTON.

Total number of cases	8	Right tube resected	3
Left ovary diseased	3	Right tube punctured	1
Right ovary diseased	3	Left ovary removed	3
Ovary diseased not stated	2	Ovary removed not stated	1
Left tube diseased	6	Right ovary removed	3
Right tube diseased	6	Left tube removed	1
Ovaries resected	0	Right tube removed	2
One ovary punctured (not stated which)	1	Pregnancy	0
Left tube resected	5	Recovery (data in 3 cases only)	3

Dr. Reynolds holds the record with us in this country as a successful operator in cesarean section. The report of his cases does not represent more than 10 per cent. of the work he has done, but it is evidence sufficient that he is a thorough believer in conservatism in appropriate cases.

E. C. SAVIDGE, NEW YORK.

Number of cases	large	Pregnancies	4
Implantations (abdominal operations), per cent	100	Results, very gratifying in all respects but pregnancy.	

F. F. SIMPSON, PITTSBURG, PA.

Total number of cases	53	Right salpingostomy	3
Right salpingoöphorectomy	11	Left salpingostomy	2
Left salpingoöphorectomy	10	Ventrosuspension, etc	33
Right ovary resected	6	Pregnancies	5
Left ovary resected	7	Appendectomies	7

A. LAPTHORN SMITH, MONTREAL, CANADA.

Left ovary diseased	14	Right tube removed	12
Right ovary diseased	16	Ventrosuspensions	2
Left tube diseased	17	Results:	
Right tube diseased	14	Good	12
Left ovary exsected	3	Pregnancy	2
Right ovary exsected	10	Unsatisfactory	4
Left tube exsected	0	Unknown	1
Right tube exsected	1	Number of cases	17
Left ovary removed	9	Married	12
Right ovary removed	5	Single	5
Left tube removed	16	Average age, under	30

I. S. STONE, WASHINGTON, D. C.

Left ovary diseased	69	Ventrosuspensions	36
Right ovary diseased	69	Appendectomies	6
Left tube diseased	18	Pregnancy	1
Right tube diseased	31	Myomectomies	6
Left ovary exsected	12	Vaginal sections	3
Right ovary exsected	12	Vaginal suspension	1
Right ovary exsected	19	Hysterectomies	2
Left tube exsected	2	Cured	44
Right tube exsected	5	Relieved	40
Left ovary removed	26	Not relieved	1
Right ovary removed	29	Average age	28
Left tube removed	15	Married	53
Right tube removed	26	Single	32
Left ovary punctured	33	Number of cases	85
Right ovary punctured	24		

Dr. Stone is averse to doing conservative work on infected cases, but believes most emphatically in leaving any portion of healthy ovarian tissue in the young.

MAGNUS A. TATE, CINCINNATI.

Total number of cases	2	Right ovary resected or punctured	1
Left ovary diseased	2	Ventrosuspension	1
Right ovary diseased	1	Pregnancy	0
Left ovary resected or punctured	2	Recoveries	2

JOHN F. THOMPSON, PORTLAND, ME.

Dr. Thompson reports one case in which both ovaries were cystic. The left was removed and the right resected. The woman subsequently became pregnant and gave birth to twins.

ALBERT VAN DER VEER, ALBANY, N. Y.

Ovarian surgery is much more satisfactory and attended with better results than tubal surgery.

H. N. VINEBERG, NEW YORK.

Total number of cases	106	Operation failed	10
Vaginal sections	34	Died	1
Laparotomies	72	Cured or much improved	95
Pregnancies	12		

Dr Vineberg's report evidences the fact that this work can be done per vagina with as good results as by the abdominal route, which leaves this question still open for discussion.

EDWIN WALKER, EVANSVILLE, IND.

Total number of cases	6	Right ovary removed	0
Left ovary diseased	5	Left tube removed	5
Right ovary diseased	5	Right tube removed	3
Left tube diseased	5	Ventrosuspension	1
Right tube diseased	5	Pregnancy	1
Left ovary resected	1	Average age	30
Right ovary resected	4	Cured	2
Left ovary punctured	1	Improved	1
Left tube resected	1	Not improved	1
Right tube resected	2	Too recent for results	2
Left ovary removed	3	Married	6

T. J. WATKINS, CHICAGO.

He knows of several cases of pregnancy following ovarian surgery, but has kept no records.

J. H. CARSTENS, DETROIT, MICH.

Dr. Carstens of Detroit, although he did not give me statistics of his work, expressed his opinion in his characteristic and candid manner concerning this work. He agreed in the main with Dr. Wheaton, that in suitable cases it was wise to leave portions of the ovaries in position, in order to prevent as much as possible the reflex conditions that follow such work.

C. A. WHEATON, ST. PAUL, MINN.

Dr. Wheaton sums up the whole question in such a concise and straightforward manner that I desire to quote his letter in full:

I have before me your favor of Nov. 19, etc. . . . In our hands conservatism has proven a great boon to suffering femininity. I regret that our cases are not so classified that they can be of service to you. We have repeatedly made operations on the pelvic organs of the female, often removing the uterus and leaving the ovaries; often removing the tubes and leaving the ovaries and the uterus; often removing both tubes and leaving one ovary; often removing a tube on one side and an ovary on the other; often removing portions of ovary or tube, and I have yet to see the case in which I have regretted that sort of conservatism. It seems to me that the all-important question, independent of every other consideration, is the leaving ovarian tissue enough to preserve the sexual integrity of the woman. When I say "sexual integrity" I mean in its physiologic sense. A woman, deprived of her ovarian machinery, to my mind, is as much a defective as the eunuch, or the children born without any of the organs which go to make up the perfectly developed animal.

I regret that I am unable to give you a series of cases classified, but I have never kept a consecutive record of my work.

H. T. WILLIAMS, ROCHESTER, N. Y.

Total number of cases	250	Right ovary diseased	85
Available for statistics	155	Left ovary diseased	60
Ventrosuspensions	52	Pregnancies	25
Appendectomies	30		

SUMMARY.

An analysis of the preceding tables gives the following results:

TOTAL NUMBER OF CASES.

Baker, Boston	1	Ill, Newark, N. J	66
Boldt, New York	82	Manton, Detroit	28
Brettauer, New York	31	Marx, New York	1
Brothers, New York	50	Newman, Chicago	86
Burrage, Boston	187	Norris, Philadelphia	42
Clarke, Cambridge, Mass.	13	Palmer, Cincinnati	88
Coe, New York	5	Porter, Fort Wayne, Ind.	50
Cragin, New York	33	Price, Philadelphia	100
Cumston, Boston	47	Reynolds, Boston	8
Douglas, Nashville, Tenn.	30	Simpson, Pittsburg	53
Dudley, New York	269	Smith, Montreal, Canada	17
Earnest, Atlanta, Ga	8	Stone, Washington, D. C.	85
Ferguson, Chicago	75	Tate, Cincinnati	2
Frederick, Buffalo	125	Thompson, Portland, Me.	1
Goffe, New York	115	Vineberg, New York	106
Goldspohn, Chicago	97	Walker, Evansville, Ind.	6
Gordon, Portland, Me.	2	Williams, Rochester, N. Y.	155
Griffith, Kansas City, Mo.	4		
Humiston, Cleveland	5	Total	2168

This number could be considerably increased by including figures furnished from memory, etc., without proper documentation.

AVERAGE AGE.

In but few reports is the age recorded. From the statistics submitted by Boldt, Ill, Smith, Stone and

Walker, it appears that the average age of patients is slightly below 30 years.

MARRIED OR SINGLE.

Most reports are also defective in this respect. Out of 405 cases reported by Cragin, Dudley, Ill, Smith, Stone and Walker, 315 are known to have married—nearly 80 per cent.

LEFT OVARY DISEASED.

Boldt	32	Simpson	17
Brettauer	12	Smith	14
Cragin	26	Stone	69
Cumston	31	Tate	2
Dudley	204	Thompson	1
Ferguson	46	Walker	5
Frederick	65	Williams	60
Humiston	4	Palmer	88
Ill	34		
Manton	13	Total	722
Reynolds	3		

RIGHT OVARY DISEASED.

Boldt	33	Reynolds	3
Brettauer	11	Simpson	17
Cragin	27	Smith	16
Cumston	31	Stone	69
Dudley	188	Tate	1
Ferguson	23	Thompson	1
Frederick	48	Walker	5
Humiston	5	Williams	85
Ill	28		
Manton	23	Total	702
Palmer	88		

LEFT TUBE DISEASED.

Boldt	24	Manton	2
Brettauer	11	Reynolds	6
Cragin	32	Simpson	12
Dudley	59	Smith	17
Ferguson	22	Stone	18
Frederick	73	Walker	5
Humiston	1		
Ill	40	Total	322

RIGHT TUBE DISEASED.

Boldt	23	Manton	5
Brettauer	13	Reynolds	6
Cragin	29	Simpson	14
Dudley	53	Smith	14
Ferguson	17	Stone	31
Frederick	60	Walker	5
Humiston	5		
Ill	33	Total	308

LEFT OVARY REMOVED.

Brettauer	3	Palmer	88
Cragin	16	Reynolds	3
Dudley	41	Smith	9
Ferguson	20	Stone	26
Frederick	47	Thompson	1
Humiston	1	Walker	3
Ill	21		
Manton	2	Total	281
Conservative operations			370
Total operations on left ovary			651
Conservative—Left, 370; right, 384			754
Radical—Left, 281; right, 241			522

LEFT OVARY RESECTED (OR PUNCTURED).

Boldt	30	Manton	15
Brettauer	7	Simpson	7
Cragin	10	Smith	3
Cumston	31	Stone	45
Dudley	155	Tate	2
Ferguson	26	Walker	2
Frederick	18		
Humiston	3	Total	370
Ill	16		

RIGHT OVARY REMOVED.

Boldt	3	Manton	5
Brettauer	4	Palmer	88
Cragin	17	Reynolds	3
Dudley	26	Simpson	11
Ferguson	7	Smith	5
Frederick	25	Stone	25
Humiston	5		
Ill	17	Total	241
Conservative operations			384
Total			625

RIGHT OVARY RESECTED (OR PUNCTURED).

Boldt	29	Manton	20
Brettauer	7	Simpson	9
Cragin	10	Smith	10
Cumston	31	Stone	43
Dudley	171	Tate	1
Ferguson	16	Walker	4
Frederick	18		
Ill	15	Total	384

LEFT TUBE REMOVED.

Boldt	3	Reynolds	1
Brettauer	3	Simpson	10
Cragin	17	Smith	16
Dudley	27	Stone	15
Humiston	1	Walker	5
Ill	25		
Manton	2	Total	127
Conservative operations			96
Total operations on left tube			223

LEFT TUBE RESECTED (OR OPENED).

Boldt	20	Simpson	2
Brettauer	8	Stone	2
Cragin	16	Walker	1
Dudley	28		
Ill	14	Total	96
Reynolds	5		

RIGHT TUBE REMOVED.

Boldt	4	Reynolds	2
Brettauer	6	Simpson	11
Cragin	15	Smith	12
Dudley	26	Stone	26
Humiston	5	Walker	3
Ill	24		
Manton	4	Total	138
Conservative operations			83
Total on right side			221
Conservative—Right, 83; left, 96			179
Radical—Right, 127; left, 138			265

RIGHT TUBE REMOVED (OR OPENED).

Boldt	19	Simpson	3
Brettauer	7	Smith	1
Cragin	13	Stone	5
Dudley	22	Walker	2
Ill	6		
Manton	1	Total	83
Reynolds	4		

SUSPENSION OF UTERUS.

Boldt	82	7
Brettauer	31	2
Brothers	50	6
Dudley	244	99
Ferguson	69	22
Frederick	73	12
Griffith	4	4
Humiston	5	3
Ill	66	20
Simpson	53	33
Smith	17	2
Stone	85	36
Tate	2	1
Walker	6	1
Williams	155	52
Total	942	300

APPENDICECTOMIES.

Brettauer	31	1
Dudley	244	32
Ferguson	69	30
Frederick	73	8
Ill	66	3
Simpson	53	7
Stone	85	6
Williams	155	30
Total	776	117

In 776 cases reported by Brettauer, Dudley, Ferguson, Frederick, Ill, Simpson, Stone and Williams, appendicectomy was performed 117 times.

RESULTS.

Operator.	No. Cases.	Recovery or Marked Improvement.	Unimproved.	Died.
Boldt	82	..	..	0
Burrage	187	136	..	3
Clarke	13	13	..	0
Cragin	33	..	..	1
Cumston	37	37	..	0
Douglas	30	..	..	0
Earnest	8	7	1	0
Ill	50	47	2	1
Manton	28	25	3	0
Newman	86	69	17	0
Palmer	88	..	..	3
Reynolds	3	3	..	0
Smith	16	12	4	0
Stone	85	84	1	0
Tate	2	2	..	0
Vineberg	106	95	10	1
Walker	4	3	1	0
	858			9

Thus in 858 operations but 9 patients are known to have died from intervention. In 435 cases in which complete results are given the operation was successful in 396 and unsuccessful in 39 (10 per cent. failures; 1 per cent. mortality).

PREGNANCIES.

Baker	1	Ill	8
Boldt	1	Jewett	3
Brettauer	3	Manton	2
Brothers	8	Marx	1
Burrage	23	Newman	8
Clarke	3	Norris	2
Coe	5	Polk	5
Cragin	1	Savidge	4
Cumston	12	Simpson	5
Douglas	5	Smith	2
Dudley	31	Stone	1
Ferguson	12	Thompson	1
Frederick	8	Vineberg	12
Goffe	10	Walker	1
Goldspohn	10	Williams	25
Gordon	2		
Griffith	3	Total	226
Humiston	5		

An analysis of the recorded lesions, operations, etc., reveals certain data of interest.

There is a slight preponderance of diseases on the left side, 722 diseased ovaries as contracted with 702 on the right side; while the tubes show a similar preponderance, viz., 322 as against 308. While these differences are slight, they are probably not due to chance, but should be susceptible of explanation on circulatory grounds (absence of valves in left spermatic vein, pressure of fecal matter in sigmoid flexure on this vein, etc.).

The figures show that conservative operations were performed on the left ovary 370 times, while the organ was removed 281 times. The corresponding figures for the right ovary are 384 conservative and 241 radical operations. Hence the totals comprise 754 conservative and 522 radical operations. This excess of conservative intervention is bound to increase in the future.

When we come to operations on the tubes the figures for conservative and radical intervention are found to be reversed. Thus on the left side there were 127 complete extirpations of the tube against 96 resections, punctures, salpingostomies, etc. The corresponding figures for the right tube are 138 radical and 83 conservative operations. The totals are, therefore, 265 extirpations and 179 partial operations. A number of surgeons are outspoken against conservative work on the tubes, and it is difficult to forecast the future in regard to the character of intervention on the tubes accompanying conservative operations on the ovaries.

In regard to the statistics on uterosuspensions, appendectomies, etc., given in my tables, it is only necessary to emphasize the fact that multiple operations, including plastic surgery of the genital tract, must frequently be performed in connection with conservative surgery of the ovaries.

In regard to results, two classes must be considered: The general outcome of the operation, and the preservation of sex. The primary mortality is quite insignificant, amounting to but about 1 per cent.—9 cases in nearly 2,200 (2,168). It is possible that some of these few may not be attributable to the operation proper. In regard to the ultimate success of the intervention the tables show not over 10 per cent. of failures, and many of these were corrected by second operations, which, however, would be classed as radical intervention. The overwhelming majority of my correspondents express themselves plainly in favor of conservatism on general principles, the very few exceptions being duly noted under individual reports.

In regard to the preservation of sex, we do not find many statements as to the persistence of menstruation. It is to be regretted that operators can not control their cases in this respect, but the difficulties are almost insurmountable. The question of subsequent pregnancies can be answered very satisfactorily. Despite the great difficulties attending the following up of these cases, we have positive proof that at least 10 per cent. of the women who make up by statistics became pregnant. When we bear in mind that many of these women doubtless do not desire offspring, and that quite a number

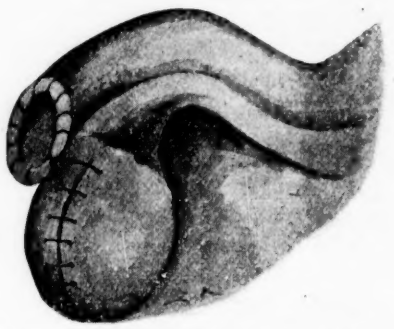

Fig. 1.—Case 1. Showing appearance after tube was amputated and ovary sewed up. The two sides were alike.

had both ovaries removed (Dr. Palmer's cases), the percentage must be regarded as remarkable; for there is every reason to believe that many pregnancies were not located, while in many other cases the operations were of such recent date that pregnancy is likely to develop in due time.

I have not thus far mentioned the many cases of deformed and twisted conditions of the tubes on which we can do conservative work. Bearing in mind its anatomy

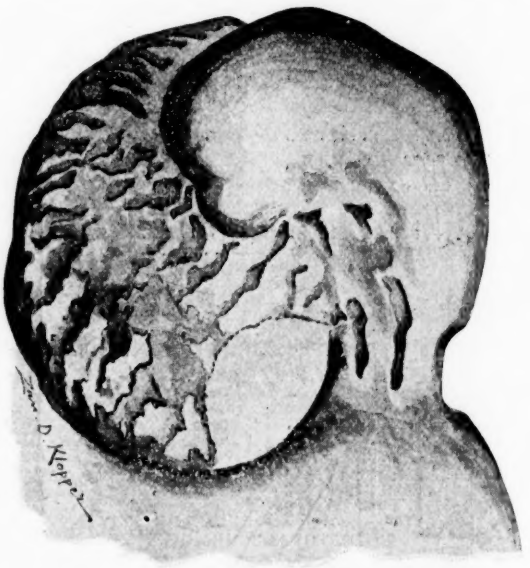

Fig. 2.—Case 2. Anterior view showing remaining healthy portion of right ovary.

and surroundings, it is not to be wondered at that the tube is subjected constantly and especially at the time of menstruation, to congestion and thickening, as a result of displacement, or pressure, which will cause a temporary, if not a permanent, closure of some portion of its lumen. See plates of Dr. Ferguson and myself. Conditions such as these of the tube can be relieved by conservative work.

The "surgical menopause," so to speak, has become such a fruitful source of revenue to those in our profes-

sion who are eminent in their practice as nerve specialists, and the records of their work evidence such an accumulation of various nervous manifestations consequent on the total removal of the uterus and appendages; or (even to put it mildly), a partial removal of these organs, that it behooves the operating surgeon who is yearly doing a large amount of this work, to bear in mind, that possibly he may be sowing the seeds of disease in some other part of the body while he so skilfully removes that which he considers to be local.

Having had this fact many times so forcibly brought to my mind by the return of patients with these nervous symptoms, so prominent as to be a constant source of annoyance to them, I have been forced in defense of myself, and for the benefit of my patients, to give serious thought and study to this condition from the nervous standpoint, and rather than attempt to give you my own opinion from a clinical standpoint, something that you might not feel I was justified in offering to you from my knowledge alone, I much prefer to quote to you from the experience of one of our best-known teachers on nervous diseases in New York, or even the United States—Dr. Graeme Hammond, professor of nervous diseases in the Post-Graduate Medical School. He says:

The more organs removed, the more pronounced the nervous symptoms are likely to be. The results most likely to follow, in mild cases, are those of neurasthenia. In more severe cases, from mild to severe grades of hysteria and dementia. In still others we see more severe mental disturbances, such as development of paranoia, melancholia and a mild grade of dementia, with severe hot flashes.

These hot flashes are very common, even after the removal of parts of the pelvic organs, not necessarily the removal of all of them; say simply the uterus or one ovary. They get neurasthenic symptoms, insomnia, depression of spirits, with crying spells, irritability, inability to apply the mind to ordinary occupations, flushes of the face, etc. These flushes are due to vasomotor paralysis, having its origin in the generative organs. That is probably cerebral, due to temporary paralysis of the sympathetic system.

There may be, on the other hand, attacks of coldness of the feet or hands, which are the result of the spasmodic condition of the blood vessels due to irritation.

This paralysis or irritation of the sympathetic system results unquestionably from the surgical operation. What that operation really does; how the removal of those organs affect the brain, whether it is from the cessation of the menstrual function or not, I am not quite so clear.

In answer to Dr. Hammond's query concerning just how the operation should interfere with the nervous centers it is only necessary to call the attention of those of you who are daily operating to the normal anatomy of the pelvis, its lymphatic, its sympathetic and its vasomotor nerve supply, and then ask you if it can be possible to remove a section of an electrical supply to the different parts of the body, emanating from the brain, to cut out a section of its conductors on both sides of the body, and have the work go on as before until such time as that removal can be repaired by nature. It is only a homely comparison between the machinery of the body and the machinery of electricity and mechanics, but it seems to me only reasonable to suppose that if it produces defective action in the latter (mechanics) it must also do the same to the body.

It would seem as if the ovaries and probably the testicles add something to the system which is necessary for that individual's complete development, and by removing the ovary or testicle, you deprive the system of something which causes a perversion of nutrition. There is a progressive failure of sexual orgasm from coitus, with the progressive changes in the nerves which supply the clitoris, but whether there is a failure of desire or not would be another matter, because desire is purely cerebral. As the clitoris degenerates the power of experiencing the orgasm will diminish little by little

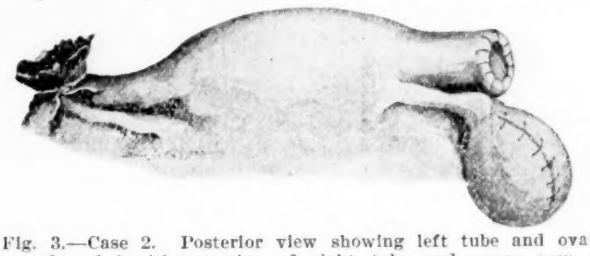

Fig. 3.—Case 2. Posterior view showing left tube and ovary removed and healthy portion of right tube and ovary seen in Figure 2 sewed up.

until it finally fails altogether. These women for a time have erotic dreams showing the desire which they can not appease by natural cohabitation. In a little while they stop.

Fig. 4.—Case 2. Posterior view showing fistula from tube to bowel, and showing Figure 2 opened.

There are some women who are abnormally sexual, and in such women the power of experiencing the orgasm lasts much longer than it does in the average woman. In some rare instances the sexual appetite is

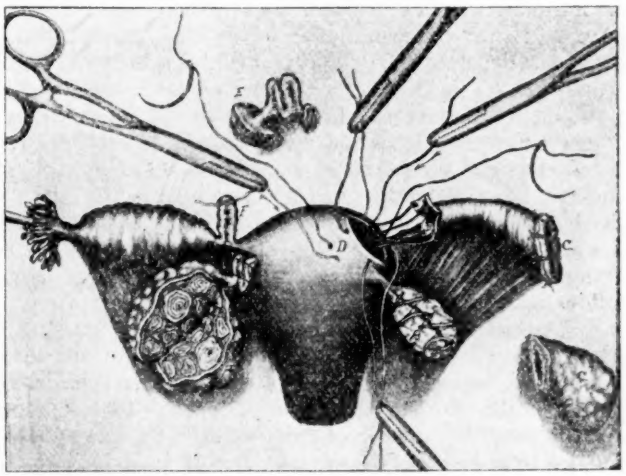

Fig. 5.—Conservative work on the adnexa. (Drawn for Dr. A. H. Ferguson, Chicago.) A. Bisection of ovary. B. Shortening ovarian ligament. C. Salpingostomy and the closed end removed. D. Hysterosalpingostomy, right. E. Proximal end of tube and horn of uterus removed. F. Left tube obstructed proximally; into the open fimbriated extremity is inserted the nozzle of an inflator, by which an attempt is made to force air through the tube.

greatly increased after removal of the uterus and its appendages.

There are occasional cases which are unable to experience the orgasm and who turn from coitus with ter-

ror on account of the suffering which they undergo whenever coitus is attempted. These patients are, of course, greatly relieved by the removal of those organs which have caused their suffering. Sometimes in such cases as these the sexual desire is greatly increased after an operation and this increase may continue for years.

In some women with a pronounced neurotic history there appears to develop after operations on the pelvic organs a periodical mania in which sexual fury is the pronounced symptom. In such cases there are periods in which the woman indulges in sexual excesses for days at a time, going clandestinely to houses of easy virtue for the purpose; and then there follows a period in which (very often of several weeks' duration) there is little or no sexual desire at all for them, to be followed in its turn by another period of sexual fury. These are cases of recurrent sexual mania, akin to recurrent attacks of dipsomania.

I would say this: that there is little doubt that the removal of the pelvic organs is very prone to induce degenerative cerebral changes in those who are predisposed by heredity to a neurosis. In other words, you take a woman who has a tendency to nervous disease in the family, and who is nervous herself, and that operation may induce paranoia, which might not have developed until the natural menopause at the age of fifty, or might not develop at all.

Reflexes.—In regard to the pain in the back, you can account for that by pressure on the nerve centers in the pelvis.

Constipation.—Simply in those cases where neurasthenia is produced.

Typical Symptoms of Neurasthenia Resulting from this Operation in the Case of a Patient.—Walks with difficulty on account of weakness and pain, the pain being located in both thighs. She has vertigo, insomnia, disagreeable dreams, depression of spirits, crying attacks, irritable, fretful and a feeling of pressure in the head, and headache; flatulency, dyspepsia and constipation. Now, these are typical symptoms. In a good many neurasthenic subjects there is a great degeneracy of mind because they think that people can tell they have had this operation done by looking at them, and they get depressed from that, avoid society and hate to go out. I have seen a number of such cases.

When we remove the testicles from the male, he becomes timid and loses his virility and courage; he becomes fat and gross; there is also a similar change in the animal. The horse has not the health, the virility or the courage of the stallion. Now, simply cutting off his toe would not make this change. There is something vital taken away from him, and the parts taken out constitute something that he especially requires.

With regard to hysterectomy, it is well-known that a woman on whom hysterectomy has been performed loses her sexual desire in about eighteen months therefrom, barring cases I have already mentioned. If it is possible to save the uterus, why not do it? If it is possible to save only half an ovary, save it. If it is possible to save only part of a tube, save it, provided that it is, or can be made, patent. If there is a fibroid in the uterus, remove the fibroid and leave the uterus, in selected cases. If there is a cyst in the ovary, remove the cyst and leave what healthy ovarian tissue you can. You know that this work can be done and that the resected ovary or tube will heal. If there is mild oozing of blood, the pelvic peritoneum will take care of it. This is conservative surgery. May it continue to develop in the future!

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THE CAPACITY OF A HUMAN MUSCLE FOR WORK.*

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HISTORICAL REVIEW.

Each year adds its share to the work that is being done by the different investigators in the study of muscular contractions, neuromuscular fatigue and the ability of a muscle to do work. To Mosso[1] must be given the credit of first making investigations with the human muscle. The instrument used by him in his work consisted in a weight and pulley. The muscular power obtained he expressed as weight multiplied by the dis-

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. L. Hektoen, F. B. Wynn and W. S. Hall.

1. Mosso: Ueber die Gesetze der Ermudung, Archives für Physiologie, 1890, p. 89.

tance through which it was raised. Maggiora,[2] Lombard,[3] Treves,[4] Cleghorn and Stewart,[5] Storey[6] and others continued investigations, introducing various modifications into the technic, thereby obtaining results of considerable value and interest.

Thus the original idea and the one followed more or less closely since has been to have the muscle raise and lower a weight successively through a given distance. It was found that a muscle can raise the weight at a regular rate until, as fatigue sets in, the height of the contraction becomes less and the movements become slower and more difficult. The amount which a muscle can do depends on the muscle and the technic used, the rapidity with which it contracts and the weight it has to lift. Among the objections that soon became evident are the following: (1) That the muscle after a short time becomes so fatigued that it can no longer lift the given weight. It can still exert a considerable amount of force, and if a lighter weight be used it can lift it. (2) It is found that only isotonic contractions are possible in the use of the weight ergograph, and that the muscle is under a continuous tension. (3) The greatest tension of the muscle is that required to overcome the inertia of the weight in starting it.

Others, thinking that with the use of the weight the muscle does not work to the greatest advantage, employed the spring. Cattell,[7] Binet and Vaschide,[8] Franz,[9] Hough,[10] Fick[11] and others have used this form quite extensively, but it has not replaced the use of the weight entirely. The advantages of the spring over the weight are the following: (1) The slightest movement made by the muscle can be recorded, whether it is of the isotonic or isometric form. (2) An interval of rest is allowed the muscle between the periods of relaxation and contraction. (3) The inertia is less pronounced. On the contrary, however, Franz[12] says that most of the objections which apply to the weight will also apply to the use of the spring. Thus it may be seen that the introduction of the isometric contraction, a condition not possible with the weight, has added interest to the study of action of a muscle.

GENERAL CRITIQUE.

In answer to the objections to the weight or spring ergograph, it has been mentioned that most of them are objections either to the mechanical construction which might easily be overcome, or to their use in particular problems. But no mention was made to the most serious fault of these methods, viz., that the muscle does not work under conditions which are physiologic. With the weight, the muscle is "loaded," having no interval of rest at any time, while with the spring it is "after-loaded." A large part of the energy expended by either the "loaded" or "after-loaded" muscle is not accounted for, because it is expended either in the form of internal energy or as external work which can not be computed. The loaded muscle, on the one hand, becomes tetanized early, and though the weight tends to stretch it during relaxation and the rest period, the results of such experiments with muscle-nerve preparations of a frog make it evident that the muscle neither relaxes nor rests between contractions after the fatigue sets in. The after-loaded muscle, on the other hand, must be exerting a certain amount of energy in "easing" back the weight to its rest which would otherwise fall back under the influence of gravitation. The cycle of the former is contraction, relaxation with load and stretching. With the latter it is contraction, relaxation with load and rest.

Put in a practical way, the loaded muscle might be explained thus: Let a man lift a twenty-five-kilogram weight from the floor to the table, and without resting it on the table lower it to the floor; but before it touches the floor let him raise it again to the table and repeat until he is exhausted. At no time does he rest from his weight, and fatigue comes on quickly. If, however, in the interval between the lowering and the next lift the weight is allowed to rest on the floor for a few seconds, the muscle will have a chance to recuperate, and he will be able to do more work as the result. This is the condition with the after-loaded muscle.

But neither of these forms of work is used by the muscles in active life. Therefore, any results or conclusions obtained by them under these conditions would be of limited value. What seems to me to be a better form of work might be explained thus: Let a man lift a weight from the floor to the table and leave it there, reach down and lift another and continue. Work is being performed by him only with the lifting of the weight. During the remainder of the time the muscles are relaxed and resting for the following task. Its cycle in work would be contraction, relaxation without load and rest. The muscles expend little or no energy during relaxation and none at all during the rest period. Fick, by means of his *Arbeit-sammler,* has applied this method to the frog muscle. Broca and Richet[13] have made a few experiments on the human muscle. Their work, however, has not been very extensive. Hall[14] applied this idea of Fick to the human muscle independently of Broca and Richet.

The above criticisms may be summarized as follows:

(1) The various forms of the Mosso ergograph "load" the muscle and cause it to exert energy in some form constantly, while work is being accomplished part of the time only.

(2) The spring ergograph "after-loads" the muscle when used to record isotonic contractions and allows rest for the muscle between relaxation and contraction, but not during relaxation.

METHODS.

With a view of overcoming as many of the objections as possible and applying this method of work to the human muscle, Hall's work-adder was devised. A detailed account of the instrument is necessary, as no description of it has ever been made in literature. By it the muscle works only during the actual lifting of the weight. The troublesome inertia is lessened by having the weight made heavy and having it move so slowly that it follows

2. Maggiora: **Ueber die Gesetze der Ermudung,** Archives für Physiologie, **1890, p. 191.**

3. Lombard: **Some of the Influences Which Effect the Power of Voluntary Muscular Contraction,** Jour. of Physiol., 1892, xiii, p. 1.

4. Treves: **Sur les lois du travail musculaire,** Archiv ital. de Biol., 1898, xxx, p. 1.

5. Cleghorn and Stewart: **Inhibition Time of a Voluntary Muscular Contraction,** Amer. Jour. of Physiol., 1901, v.

6. Storey: **The Influence of Fatigue on the Contraction of Human Muscle,** Amer. Jour. of Physiol., 1903, viii, p. 355.

7. Cattell: **Science, N. S., 1897, v, p. 909.**

8. Binet and Vaschide: **Annee psychologique, 1898, iv, pp. 245, 253, 303.**

9. Franz: **Methods of Estimating the Force of Voluntary Contractions and on Fatigue,** Amer. Jour. of Physiol., 1901, iv, p. 348.

10. Hough: **Ergographic Studies in Neuro-Muscular Fatigue,** Amer. Jour. of Physiol., 1901, v, p. 240.

11. Fick: Pfluger's Archiv für Physiologie, vol. xii, p. 176.

12. Cf. p. 353.

13. Broca and Richet: Experiences ergographiques pour mesurer la puissance maximum d'um muscle en régime regulier, Acad. of Sci. Comptes Rendus, 1898, p. 356.

14. Hall: A New Form of Ergograph, Amer. Jour. of Physiol., vi, append. xxiii.

the action of the finger very closely. Variations are allowed in the size of the weight by changing the leverage.

The objection may be raised that if the weight is of such large size, the finger, when nearly exhausted, will fail to move it, and there will be no record of the energy spent. But that the muscle may work to the full extent, a heavy weight is necessary. There are two kinds of work: (1) One in which the task is very great for that muscle and requires relatively an immense amount of energy to be expended with every effort put forth. This method can last for a short time only when exhaustion follows and a rest is necessary. (2) The other form is that in which the task is considerably below the working capacity of that muscle, and a relatively smaller amount of energy is put forth. The latter can be continued for a much longer time without fatigue necessarily following. Very different results follow the use of these two methods, and the distinction must be recognized when an interpretation of them is to be made. Some have failed to note this difference and considerable confusion has been the result. The formula—distance times weight—expresses accurately the amount of work a muscle can do if the conditions of the muscle itself and those under which it works are taken into account. Another objection is that the energy expended in starting the weights is greater than that to keep it going. This is true of every task and is not a valid objection if taken of every day work. Every object that a laborer lifts requires a greater expenditure of energy to start it than to keep it going. When the task is too great for him, he gets no credit for his work, but he still has energy sufficient for a task that is within his strength. The same principle should be applied to the individual muscle. Hough[15] admitted that "the work of our muscle consists for the greater part . . . in a series of liftings of an approximately constant weight and that this weight is far below the maximum for a given muscle," and also says: "It would be a serious mistake to abandon altogether this type of instrument," viz.: weight ergograph in fatigue experiments.

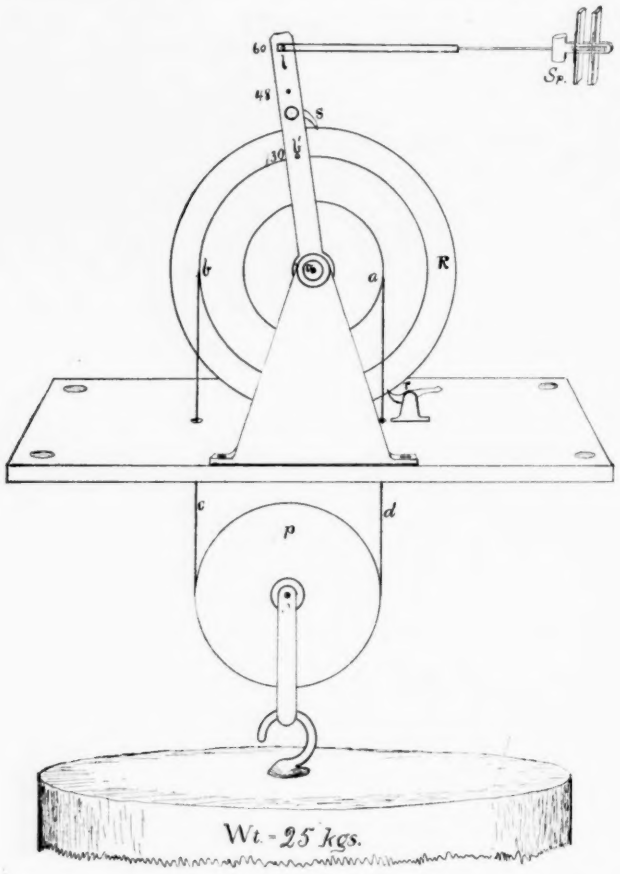

Fig. 1.—Diagram of work-adder. a, Small drum, 36 mm. in diameter; b, large drum, 60 mm. in diameter; cd, wire winding off drum a, around pulley p, and on to drum b; r, ratchet wheel, fixed immovably to both drums (this wheel has a toothed edge not shown in the figure); sp, finger splint or boot, which clamps the two terminal phalanges of the middle finger; r-s, ratchets (r fixed and s movable); l, the lifting or pulling lever, here set to lift at 60 mm. from the center o, thus lifting one-tenth of the weight, 25 kgs., as explained in the text. The splint may be attached to the lever at 48 mm. or at 30 mm.; in the latter case the amount lifted by the finger would be 5 kgs., or 11 pounds. Figure is one-half actual size.

It is true that the muscle under normal physiologic conditions is neither loaded nor after-loaded, as these terms are usually understood. It is not under a constant tension as when it contracts isotonically; it varies its length, differing from the muscle contracting isometrically. "During normal physiologic conditions a muscle does not contract isotonically, but always with a change of tension."[16] Expressed affirmatively, the working muscle expends energy only while it is lifting the weight; it varies its tension and rests between lifts. I have chosen to call a contraction under these conditions "normotonic."

THE WORK-ADDER.

One of the ergographs used in these experiments consists of a weight and a movable pulley suspended by a fine wire (Fig. 1). The two ends of this wire are wound in opposite directions on two drums (*a* and *b*) of different sizes. These drums are fixed on the same movable axis (*o*), and any movement will wind up the wire on one drum while it unwinds from the other. A ratchet (*r*) prevents any turning except in the direction which winds it on the larger drum, thus raising the weight. A pulling lever (*ol*) also rotates freely about the same axis (*o*), and by means of a ratchet (*s*) revolves the drum in the direction which raises the weight. The pulling lever then returns by the aid of a weak spring, with the finger, to its original position and is ready for the next pull. Complete rest is thus obtained for the muscle while it is not actively pulling. The heavy weight with the drums overcome, to a great extent at least, the inertia. The system of levers reduces the actual weight raised to within the power of the contracting muscle and allows for variation in its size.

The leverages are explained thus, as shown in Figure 1: The small drum (*oa*) has a radius of 18 mm. and the larger (*ob*) a radius of 30 mm. Each end of the wire (*c* and *d*), wound on these, supports one-half of the weight or 12.5 kgs. The drums act as levers of different lengths, and as each is supporting 12.5 kgs., the tendency is for the wire around the larger drum to unwind because of the longer weight arm. This movement is prevented by the ratchet (*r*). The exact amount of downward pressure to balance the 12.5 kgs. on (*oa*) is shown by the proportion, 30:18::12.5:x, or 7.5 kgs. But there is a weight of 12.5 kgs. hanging on the lever (*ob*). Therefore, the ratchet is sustaining the difference between 12.5 kgs. and 7.5 kgs, or 5 kgs., and before the weight can be raised this must be overcome. To further reduce this weight of 5 kgs. the pulling lever is used. The power arm (*ol*), which may be varied at will, is 60 mm. long, and the weight arm (*ob*) is 30 mm. long,

15. Cf. pp. 242 to 245.
16. Schenck and Gruber: Human Physiology, p. 188.

the proportion being 60:30::5:x, or 2.5 kgs. Then the actual force necessary to raise 25 kgs. by this instrument is a force in excess of 2.5 kgs. pulling at the distal end of the pulling lever (*l*).

The arm rest consists of a slanting board modeled at the end to fit the hand. That the middle finger might have free movement, a notch was cut in the board. Straps hold the arm, hand and fingers in place. The first, third and fourth fingers are bent over the end of the rest and held in the partly flexed position by the straps. This allows the contracting muscle to pull the working finger toward the position held by the others instead of away from it and gives an easier movement.

This instrument fulfills the requirement (1) that the muscle works only when pulling the weight upward; (2) that the tension varies; (3) that the inertia be reduced and (4) that the muscle be neither loaded nor afterloaded. But the mechanical construction is at fault since the heavy weight after being raised to a distance of 50 cm. must be lowered again before the work can be continued again, thus allowing a rest for the muscle. Therefore, while it is suitable for ordinary fatigue work, it is not adapted to recording continuous efforts. That the experiments might continue with the same idea in view, another instrument of different mechanical construction, but involving the same principles, was made and substituted. Its construction and methods of work will be given.

THE AIR CUSHION.

The essentials of this instrument consist in an upright cylinder (see Fig. 2, *c*) closed at the lower end except for a large inlet valve (*a*) and at the upper end by a very thin sheet of dentist's rubber dam loosely stretched across it. A stopcock (*b*) is placed in one side of the cylinder. The weight while resting on the rubber sheet is not supported by it, but by a small metal bar (*d*) which strikes the frame. The action is as follows: As the weight is lifted from the cushion, air rushes in through the valve (*a*). When it is lowered, it strikes the rubber sheet and causes an increase of pressure within. This compressed air acts as a support until its slow escape through the stopcock (*b*) allows a return of the normal pressure within and the weight to be lowered, until it is caught by the metal bar. The rapidity with which it is lowered is regulated by the size of the opening made by turning the stopcock.

A wire extends from the weight up to an elbow lever (*l*) fixed at the end of the arm rest, and another extends horizontally from this to the finger where it is attached by an adjustable metal splint or boot (*sp*). The tracing lever records the actual movement of the finger on the drum (*D*). The size of the weight is easily changed by varying the length of the two arms of the elbow lever. The arm rest used was similar to the one described with the work-adder.

A PACE FOR THE WORKING MUSCLE.

In previous ergographic work much attention has been paid to the character of the individual tracing and to the production of fatigue. In general, not over one hundred contractions were necessary to bring on this fatigue. But very little study has been made to ascertain under what conditions a muscle can continue to work for a long period of time. In 1890, Maggiora[2] found that he could contract the middle finger of his left hand continuously at the rate of one contraction in two seconds against a weight of 1 kg. He concluded from his experiments that there exists for the human muscle a definite weight with which one can perform the greatest possible work. When the weight or the rate of contraction is increased, fatigue will occur. He also found that this maximum of work varies with different persons at the same time and the same muscle at different times. Lombard[3] contracted the abductor indicis muscle about 9,000 times, or for two and one-half hours, at the rate of once a second against a weight of 500 gms., reaching about the same conclusions as Maggiora. Both of these investigators used the weight ergograph which loaded the muscle and did not allow the muscle to work to the greatest advantage. Maggiora flexed the entire finger while the hand was in the supine position. Neither seems to have tried to compute the amount of work done by these muscles.

Fick[17] found that, using a heavy weight, about one-fourth of the total energy expended by a muscle is used in lifting it and the remainder is changed into heat, electricity, etc.; while with a light weight, only about

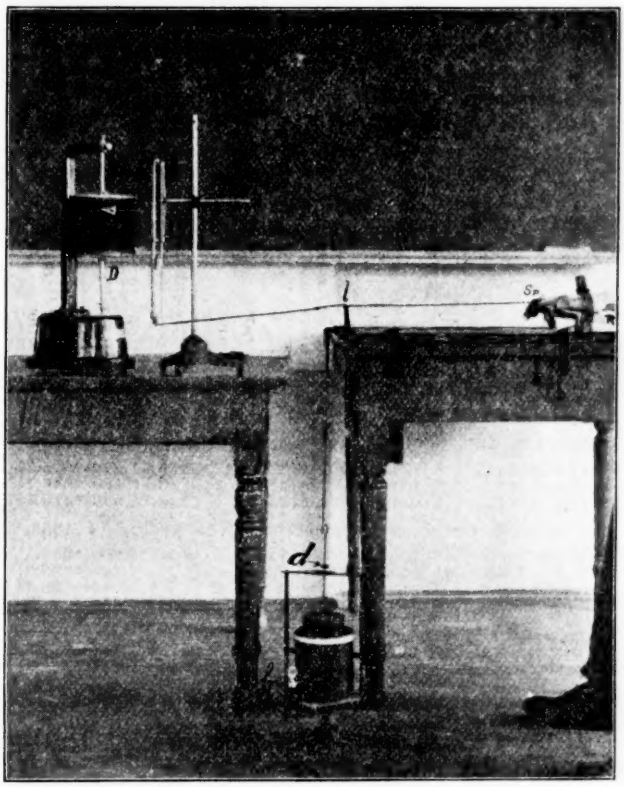

Fig. 2.—Ergograph with air-cushion. C, cylinder, about 10 cm. in diameter, having a large valve (a) opening from below; b, stopcock through which the air escapes on descent of the weight, the rate at which it escapes is regulated by the stopcock; d, metal bar soldered to the weight rod, this bar strikes the cylinder frame and serves to support the weight between contractions; l, elbow lever, so constructed that the two arms may be varied in length by hooking the weight cord or the power cord into different holes; Sp, finger splint; R, arm rest; D, drum of kymograph.

one-twentieth is spent as external work. That there is so much loss of energy is due, I think, to the fact that the muscle does not work to the greatest advantage. While some attempts have been made to improve the condition under which the muscle works, sufficient data have not been tabulated to show the true value of these changes.

The results given here were obtained principally on the air cushion. That the muscle might be in training, as Hough[18] has shown is necessary for the best results,

17. Fick: Pflüger's Archives, 1878, xvi, p. 85.
18. Hough: Ergographic Studies in Muscular Soreness, Amer. Jour. of Physiol., 1902, vii, p. 76.

the experiments were continued over a period of two months in the spring of 1902 and about three months in the spring of 1903. Tracings were made at least every other day. While the experiment was being made, the subject sat at a table with the right arm and hand fastened in a prone position to the rest. Different weights were used, the rule being to increase them as the finger becomes accustomed to the work. At first the muscle became tired very quickly, but after a few weeks it gained in power and could use the heavier weights at a faster rate of contraction. The rhythm was usually a matter of choice and was influenced largely by the object in view. While many found that they could bring on fatigue within one-hundred contractions at the rate of one contraction every two seconds, I found that I could go at a much faster rate and continue a very much longer time without fatigue necessarily following. The height of the contractions remained practically the same, varying from 1 cm. to 1.5 cm. in height. Throughout the experiments care was taken to keep the nutrition of the finger and muscle as nearly normal as possible. No attempt was made to compute the friction, which was comparatively small. Tension on the muscle was present only during the lifting of the weight.

The following table shows some of the results obtained:

TABLE 1.

Date.	Time of Day.	Duration of Experiment, hrs.-min.	Weight in Kilograms.	Contractions per Second.	Average Height of Contract's in cm.	Number of Contractions.	Kilogram-meters of Work Done.
A.—RESULTS OBTAINED ON THE WORK-ADDER IN SPRING OF 1902.							
May 8, 1902....	8:12 a. m.	3:47	2.5	1	2.2	11,370	*625.35
May 10, 1902...	8:45 a. m.	3:23	2.5	1	2.15	10,180	*547,175
May 10, 1902...	1:30 p. m.	2:58	2.5	1	2.2	8,930	*479,987
B.—RESULTS OBTAINED ON AIR-CUSHION IN SPRING OF 1903.							
March 28, 1903..	2:15 p. m.	3:30	2.5	1	1.1	12,600	*346.5
March 31, 1903..	10:20 a. m.	1:00	2.5	2	1.1	7,200	*198.
April 1, 1903....	8:15 a. m.	2:30	3 1/3	2	1.1	18,000	†660.(?)
April 2, 1903....	3:30 p. m.	0:42	5	2	(?)	5,040	‡.....
April 4, 1903....	8:20 a. m.	3:40	3 1/3	2	1.1	26,400	*968.

* No fatigue. † Some irregularity. ‡Tracing irregular after 9 minutes; fatigue in 42 minutes.

Part A of Table 1 shows the results of the experiments on the work-adder. The longest single experiment was made May 8, and lasted for a period of three hours and forty-seven minutes, during which time over 11,000 contractions were made, and about 625 kilogram-meters of work accomplished. May 10 two tests were made with an interval of one hour and thirty minutes. The work done that day amounted to over 1,000 kilogram-meters. No fatigue other than a general body weariness was experienced after these experiments, and the height of the contraction remained very constant throughout each experiment. But the experiments were not above criticism, as there was some movement of the whole finger, and intervals of rest were made necessary when the weight was lowered.

Part B of Table 1 shows the work accomplished on the air cushion. March 28 I made 12,600 contractions in three and one-half hours. The rate was one contraction every second against a weight of two and one-half kgs. The average height of each of the tracings was 1.1 cm. and the total work accomplished 346.5 kilogram-meters. No fatigue occurred. On April 1, the rate of contractions was changed to 2 per second and the weight to 3 1/3 kgs. It was thought that this would bring fatigue; but to my surprise, after some irregularity in the tracing, the height of the contractions became more even and no fatigue was produced in two and one-half hours. The next tracing was made at the rate of two contractions a second with a 5-kg. weight. The tracing was regular for nine minutes, then varied considerably in height until fatigue (a failure to move the weight) came on at the end of forty-two minutes.

On April 4 the weight was changed back to 3 1/3 kgs., and with the same rate 26,400 contractions were made in three hours and forty minutes. The contractions varied between 1 and 1.4 cm., with an average of about 1.1 cm. Not over twenty-five strokes were lost during the entire time, and the wide variations to be expected from weariness or disturbances were surprisingly absent. No fatigue occurred except a general weariness of the whole body, which lasted during the remainder of the day. The weariness did not stop the work of the experiment, however. The total amount of work was over 968 kilogram-meters.

Comparing this last tracing with that of April 2, it will be seen that the heaviest weight that this muscle can lift continuously, contracting twice a second, is between 3 1/3 and 5 kgs. No similar amount of work has, to my knowledge, been recorded previously by a single muscle. This apparent increase of ability must be due, in a great measure, to the more advantageous conditions under which the muscle is working. Just how long this work could have continued I will not venture to say definitely, but the fact that I could keep up this pace for three hours and forty minutes without fatigue of the muscle following would justify the conclusion that the muscle could have done more. It is evident in the above experiment that the muscle had sufficient rest after each contraction to recover from the effects of that contraction. Had this not been the case fatigue would have been the result, as it had been with the use of the 5-kg. weight.

Since so many factors enter in to modify the conditions, it is not to be expected that the results will be the same in each experiment; but with the conditions sufficiently favorable it may be concluded that a muscle is able to do a day's work of eight or ten hours' duration.

FATIGUE.

Mosso,[1] Lombard,[3] Maggiora[2] and others found that the muscle became tired and could not lift a given weight after from 50 to 100 contractions, the rate being once a second. With them, the amount of work, as well as the extent of movement, decreased as fatigue was approached. Franz[19] found that with the spring he could contract 150 times and still do about 40 per cent. as much work as at the beginning of the series. During the present experiments the muscle was fatigued several times and it always gave results far in excess of those obtained by these men. The muscle did not become fatigued within a period of three hours and forty minutes when it raised a 3 1/3-kg. weight twice a second. On April 2 the muscle became fatigued in forty-two minutes after having made over 5,000 contractions against a 5-kg. weight, lifting it twice a second. After a lapse of about four weeks, it made nearly 4,000 contractions under the same conditions.

That I might find a cause for this great difference in ability, I made a few experiments with the Mosso form of ergograph. Table 2 shows some of the results as compared with those taken with the air cushion:

19. C. f., p. 368

TABLE 2.

Date. 1903.	Length of Contraction in Minutes.	Weight Used.	Contractions per Second.	Number of Contractions to Fatigue.	Results.
RESULTS WITH AIR-CUSHION.					
April 2	42	5	2	5,040	fatigue
April 4	220	3 1/3	2	26,400	no fatigue
April 29	33	5	2	3,960	fatigue
RESULTS WITHOUT AIR-CUSHION.					
April 5	22	3 1/3	2	2,640	fatigue
April 16	24	3 1/3	2	2,880	fatigue
April 29	1:08	5	2	135	fatigue

These tracings compare the time and work necessary to produce fatigue when the air cushion is used and without it.

These results do not agree with those obtained by the previous investigators. With a weight of 3 1/3 kgs. twice a second, there was no fatigue until 2,640, and in another 2,880, contractions had been made. At another time the muscle, contracting every half second, raised a weight of 5 kgs. 135 times before fatigue was produced.

The question arises, why there should be such a difference in the amount of work necessary to produce fatigue? The individual variations of the muscles would easily explain small differences, but would not suffice here. The muscle that I used was below the average in strength before the experiments began, and the time over which the experiments extended would scarcely allow such great increase in power. The difference which exists between the tracings made with the air cushion and those with the Mosso form of ergograph can be explained to a great extent by the conditions under which the muscle was working. The other is evidently the result of the endurance which the muscle gained by working many times over an extended period.

RECOVERY AFTER FATIGUE.

It was also noticed that the periods of recovery after fatigue had been reached were very much longer when the air cushion was used, than when the Mosso form of ergograph was used. The average number of contractions in the recoveries of an experiment lasting one hour and forty minutes was eighty-five, and the average intervals of absolute fatigue was fifty seconds, varying in length from 2 to 10 cm. The weight used was 5 kgs., raised every one-half second. There was no regularity in the length of the recoveries, while the intervals of loss of power had a tendency to become longer as the experiment was continued. For a detailed discussion of this subject the reader is referred to the work of Lombard.[20]

SUMMARY.

1. A muscle working under normal physiologic conditions is neither "loaded" nor "after-loaded."

2. A muscle will not contract isotonically nor isometrically under normal physiologic conditions.

3. When a Mosso or a spring ergograph is used, a large part of the energy expended by a muscle during a period of work is lost. This loss occurs in easing back the weight or the spring to its position of rest or to the zero point.

4. A recognition of the conditions under which a muscle works and the end to be attained is necessary when an interpretation of ergographic results is to be made.

5. A normal muscular contraction ("normotonic") consists in contraction, relaxation without load, rest.

6. A new form of weight ergograph has been devised which allows the human muscle to work at a greater advantage than that given by any previous form of ergograph, because it permits "normotonic" contractions.

7. A human muscle is capable of doing a far greater amount of work by the use of the new ergograph than has been previously shown in ergographic work.

8. A muscle can work over periods of long duration without fatigue when the conditions are favorable.

9. These experiments confirm the conclusion stated by Maggiora that there is a definite weight with which one can perform the greatest possible work.

10. The physiologic limit of a muscle for continuous work is modified by the rate, load and interval, or by rest and work.

[20] Lombard: The Effect of Fatigue on Voluntary Muscular Contractions, Jour. of Psychol., 1890, vol. iii.

DYSTOCIA CAUSED BY DOUBLE CONGENITAL CYSTIC KIDNEYS IN THE NEW-BORN:

A CONTRIBUTION TO THE STUDY OF CONGENITAL CYSTIC KIDNEY.

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Spiegelberg, in his well-known "Midwifery," vol. ii, p. 169, speaking of the causes of difficult labor produced by anomalies of the fetus and appendages, says: "The various causes which lead to the enlargement of the abdomen of the fetus are the following:

"1. An accumulation of serum.

"2. The distention of the urinary organs with urine, both bladder and uretus.

"3. Cystic degeneration of the kidneys.

"4. Distention of the uterus with fluid.

"5. Tumors of the liver, spleen, testicle in the abdomen.

"6. Aneurism of the aorta.

"7. A condition in which one fetus is included in another."

Under the third of these headings, viz., cystic degeneration of the kidneys, I wish to report a case of dystocia which recently occurred in my practice:

Mrs. X., aged 20, primipara, healthy, and pelvis normal, came into labor early in the morning of January 19. In the beginning the pains were of normal character and continued increasing in strength and frequency during the day and evening. Dilatation of the os was very slow. A breech presentation was easily diagnosed. The pain steadily increasing and becoming progressively harder and the os not opening proportionately, it was decided at 11 p. m. to anesthetize and deliver. Under ether there was no difficulty in dilating sufficiently to admit several fingers and grasp the feet. Traction brought the limbs well through the os, but the abdomen resisted all efforts. An examination cautiously made demonstrated some obstruction of a very considerable character in the abdomen, which was felt to be enormously swollen. By repeated and persistent traction, combined with careful manipulation, the trunk and after-coming head were eventually born, without resorting to any cutting or destructive operation. When born the child breathed a few times, not, however, emitting any cry, but very shortly breathing ceased.

The uterus contracted firmly after the discharge of a small quantity of blood, very dark in appearance. The recovery of the mother was uneventful. The conditions surrounding

the case were of such a nature as to forbid a careful post-mortem examination. Permission, however, was granted to open the abdomen and learn something of the true condition.

The child, male, must have been very near full term, although it was claimed that it was only eight months. No deformity was visible in limbs or parts, beyond the unusually large fontanelles both anterior and posterior, these being far larger than is usually found in the new-born. It is worthy of note that the head in conditions similar to this so frequently hydrocephalic, was not in this instance abnormal. The attention was at once fixed on the abdomen, which was very prominent and greatly distended. I regret that lack of time and material forbade the exact measurements. In appearance, however, it was not unlike that frequently seen in malignant disease when ascites has caused an extreme distention of the abdominal walls. Palpation and percussion showed the presence within of a solid body or bodies, as the parts could be readily felt by the tips of the examining fingers, and percussion emitted the dull note of solid bodies. An incision was made through the abdominal walls in the median line. Only a small quantity of fluid escaped. Inserting the hand in the line of the incision a solid mass was found to occupy the entire abdominal cavity, completely filling the pelvis and pushing

Fig. 1.—(×100.) a, Efferent vessel? b, Atrophied glomerulus. c, Cystic capsule of Bowman. d, Area of hemorrhage surrounding engorged vessels.

the liver and diaphragm high up in the thorax. Lying on the surface of the mass were the flat, ribbon-like intestines. Careful inspection showed that the mass was in reality two distinct bodies, both uniform in shape and consistency, meeting in the median line, forming a fissure. By exploration with the tips of the fingers it was found that the two tumors in question were in reality the two kidneys, far advanced in a state of cystic degeneration. The left was removed and is the specimen from which the accompanying microscopic slide was taken (Fig. 1). Very little of the original kidney structure remained. Stripping away the capsule the entire kidney—fully eight inches in length and four in width—was found to be filled with cysts, varying in size from a small pea to a good-sized marble. These cysts were filled with fluid, clear and serous in character. The ureters were found and a probe inserted proved them patulous for about three inches. Little or no examination could be made of the remaining viscera beyond the fact above mentioned, of the great upward displacement by compression of the liver, lungs, heart, etc. The kidney was submitted to Dr. James Carroll, assistant curator of the U. S. Army Medical Museum, who made a careful microscopic examination, the report of which is here quoted:

"The section resembles one of an adenocystoma or of the multilocular cystic degeneration that is seen occasionally in the ovary. The stroma consists of a loose fibrous reticulum fairly rich in cells. These cells are, as a rule, slender spindles with oval nuclei; in the looser portions there are some multipolar and round cells with oval or spherical nuclei. There is marked infiltration of the stroma with red blood cells and here and there small and large hemorrhages. The vessels, as a rule, are small and engorged with blood. The cystic spaces are lined with a compact layer of stratified round epithelium and are surrounded by a dense wall of cellular connective tissue. In some instances this wall is of considerable thickness and very rich in cells. The surrounding stroma shows here and there small isolated groups of contorted tubular structures resembling glandular acini. They are not surrounded by capsules and their walls appear to consist of cuboidal epithelium. The lumina of the tubules are seen in cross section to be packed with similar cells whose nuclei stain rather poorly. These acinus-like bodies are at times surrounded by small hemorrhages, again by a number of polymorphonuclear leucocytes. The grouped arrangement of these structures and the character of the cells within them would lead one to suppose that they were uriniferous tubules, but on comparison with undoubted tufts within both the distended and non-distended Bowman's capsules it is clear that they are the remains of malpighian bodies whose capsules have merged with the surrounding fibrous tissue and disappeared. In other places the malpighian bodies appear to have undergone a different change; within some of the above described cystic spaces the remains of a tuft can be seen projecting from the thickened wall into the lumen. These tufts are covered by round or cuboidal epithelial cells similar to those lining the sac. The character of the epithelium is the same when the tufts and capsules are of approximately normal size as when the capsules have been distended to form cysts.

"The uriniferous tubules have almost entirely disappeared. One or two may be seen of considerable length, slightly enlarged and filled with low cuboidal or round epithelial cells. Their basement membranes have undergone enormous proliferated thickening, are very rich in cells and closely resemble the thickened capsules of Bowman already described.

"On the whole the general changes appear to be atrophy of the epithelial structures; marked connective tissue increase; hemorrhages and cystic dilatation of a number of the periglomerular capsules of Bowman. The cystic contents appear as an almost indistinguishable structureless material showing that the fluid contained but little albumin."

Cases of congenital cystic degeneration of the kidney have been reported at intervals. The affection, while definite in character, remains, however, among the rarer diseases of the renal bodies. It is especially rare as a cause of dystocia. In a few of the cases on record the enormous distention of the kidneys necessitated puncture of the abdominal walls and practical evisceration before delivery could be effected. Fussell[1] spoke of 11 cases in which the kidney obstruction was so great as to render mutilation imperative. In his case the abdomen measured 18 inches at the umbilicus, both kidneys enormously enlarged, the left 6x5 inches, the right 5x4 inches, both in original form, lobulated and the seat of cystic degeneration, the mass composed of a multitude of small cysts varying in size from a pea to a pin point. The suprarenal capsules were enlarged. The heart was much hypertrophied and about three times the normal size; ventricles small; walls of left ventricle 5/8 inch thick, right 3/8 inch; valves normal.

Frequently associated with congenital cystic kidney in the new-born are defects of development, hydrocephalus, cleft palate, hare-lip, spina bifida, anomalies and defects of the genito-urinary organs. Duffey[2] reports a case of

1. Medical News, January 10, 1891.
2. Medical Times and Gazette, London, Feb. 10, 1866.

this disease in which the fetus was of anencephalous variety, the uterus bifid. This co-association of cystic degeneration of the kidneys and anomalies of development has led to the theory, of which we will speak later, that the disease is one of defective development rather than a change brought about by pressure or inflammation, or both.

The etiology and pathology of this interesting condition still remain largely *sub judice*. Beginning with Virchow in the early 40's, who explained the formation of cysts as the result of uric acid infarcts—an opinion now abandoned—down to the present day, theories have not been wanting. Whether congenital cystic kidney is due to defective development (embryonic theory), to pressure and obstruction (mechanical theory), or pathologic changes of a more complicated nature (the inflammation theory) are questions which have never been satisfactorily answered. Regarding these three theories of causation, somewhere within which, in all probability, the truth lies, Hektoen, writing on the subject in a very exhaustive article,[3] says:

1. The theory of retention and dilatation is based on cases in the new-born and old in which were demonstrated causes of obstruction at uriniferous tubules, papillæ, etc., including fibrinous casts, degenerated epithelium blood, precipitated salts. Virchow assumes a papillary atresia or stenosis due to fetal inflammation.

2. The theory of a cysto-adenomatous growth is based on the presence in cystic kidney of adenomata.

3. The embryonic or developmental theory which seems to explain many features otherwise unintelligible is based largely on the fact, so apparent in the majority of cases, of general abnormalities of development, as quoted in cases cited above. This idea, so clearly advocated by Shattuck and Bland-Sutton, is in brief essentially this, that the wolfian bodies and the kidneys, which in normal circumstances are distinct become blended, and through this failure of differentiation an abnormal kidney results with cystic formation as an accompaniment. This view is the one adopted by Osler and incorporated by him in his article on congenital kidney in the latest edition of his "Practice of Medicine." Rindfleisch ascribes the condition to a congenital atresia of the renal artery. Neuwerck, Hufschmid and Von Kahlen incline to the idea of adenocystoma. Fürbringer has the following: Congenital cystic degeneration (Virchow's *hydrops renalio cysticus congenitus*) is usually bilateral. According to researches its origin is generally to be found in the coalescence of the tubuli uriniferi, in obliteration of papillæ by embryonic nephritis, and in the production of uric acid infarcts. The obstruction may also be found in the urinary tract, as the condition may result from the atresia of the pelvis. Klebs assumes external mechanical influences, and Niebending attributes it to engorgement of the kidneys produced by the absence of the ductus Bottali.

It is obvious that the diagnosis of congenital cystic kidney can not be made early enough to be of any practical value to the obstetrician. Its occasional occurrence, however, should not be overlooked in those cases in which there is prolonged and unnatural resistance to the birth of the body. Careful examination demonstrating the abnormally distended condition and all other efforts failing to effect delivery, the physician is justified in puncturing the abdominal walls, passing his fingers through the opening and by the removal of the enlarged kidneys reducing the size of the child sufficiently to admit of its passage through the birth canal.

It not infrequently happens that cases of cystic kidney fail to go to term. Should, however, such a pregnancy survive to the full period of gestation, the child is stillborn or expires within a few minutes after birth. The causes of death are numerous. Asphyxia from compression of the lungs and diaphragm is the direct cause in a great majority of cases, particularly those in which there is great abdominal swelling, anuria, symptoms of anasarca, coma convulsions; tetanus and other uremic symptoms appear sooner or later, and death very rapidly supervenes.

3. Chicago Medical Review, September, 1892.
4. Diseases of the Kidneys and Urinary Organs, vol. II, pp. 84-85.

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Clinical Reports.

AN EIGHTY-EIGHT POUND OVARIAN CYST SUCCESSFULLY REMOVED FROM A PATIENT SEVENTY-SEVEN YEARS OF AGE.

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DETROIT.

In these days of operative activity, ovarian tumors weighing more than fifty pounds are sufficiently uncommon to attract attention. The mortality of the operation being so small, and the zeal of the surgeons so great, we no longer see the enormous cysts, which in the earlier days were comparatively frequent.

There being several minor points in the following case, both in the physical signs and in the after-treatment, I feel justified in reporting it in full.

History.—Mrs. M. S. entered Johns Hopkins Hospital March 23, 1903. She was barely able to stand or walk alone on account of a large abdominal tumor, and the infirmity of her age, which was asserted by her companion to be 77 years. She was of Irish descent, illiterate, and had lived for many years in the slums of Baltimore.

Present Trouble.—As far as could be ascertained, for six years the abdomen had gradually increased in size, and for the past six months she had been in bed. She had suffered little real pain, but had complained of great respiratory distress and oppression on the slightest exertion. At times there had been considerable swelling of the ankles, but no urinary disturbance had been noticed. The appetite had been fairly good, and the bowels habitually constipated.

Examination.—She was much emaciated, the face deeply wrinkled, but presenting no suggestion of the ovarian facies; the skin over the whole body was deeply pigmented and brawny. The percussion note over the lungs was resonant, and the breath sounds were harsh, with râles at the end of expiration, which was everywhere prolonged and blowing. The heart sounds were sharp and clear. The temporal, facial, radial and tibial arteries were tortuous and much thickened, standing out as hard cords. Pulse, 80 to the minute, intermitting frequently and obliterated with difficulty, the pressure necessary being 175 mm. of mercury. The lower ribs, pushed upward

by the enormously distended abdomen, formed an angle of nearly 45 degrees with the upper ribs. In dorsal decubitus the abdominal distention began at the sixth rib, rising gradually and forming a dome-shaped tumor, overhanging the symphysis. This tumor was tense on palpation, and presented a perfect percussion wave. The percussion note was flat, except high up on both sides, where there was modified tympany. On turning the patient from side to side, there was a suggestion of tympany, but no distinct movable dullness could be demonstrated. The circumference at the umbilicus measured 134 cm. (53 inches). The vaginal outlet was much relaxed and the bladder prolapsed. On account of the greatly distended and tense abdomen, a bimanual examination was impossible. The urine was dark yellow, cloudy, acid in reaction, and of a specific gravity of 1028. A trace of albumin was present, and the microscope revealed bacteria in large numbers, epithelial cells, phosphates and urates, but no casts. The hemoglobin, estimated with the von Fleischel instrument, was 55 per cent.

Operation.—As the patient seemed a poor subject for general anesthesia, March 25 I made a short median incision under cocain. This revealed a very thin cyst wall, purple in color, and quite firmly adherent to the parietal peritoneum over its anterior surface. The cyst was punctured and 38 liters of dark brown fluid evacuated. The cyst was practically uni-

locular, and was therefore readily and completely emptied. Attempted separation of the adhesions between the cyst wall and the parietal peritoneum was so painful that nitrous oxid gas was administered, and the two layers rapidly separated by wiping with a gauze sponge; here and there more dense adhesions, requiring the use of scissors or knife. The omentum, which was adherent to the cyst, was quickly tied off, and the latter delivered. Fortunately, there were no pelvic adhesions, and the very broad pedicle was readily clamped off, the tumor removed and the vessels ligated with silk and catgut. After covering in the stump, the abdomen was rapidly closed with through-and-through silkworm gut. A very small amount of ether was given, although the operation could have as well been concluded under nitrous oxid anesthesia alone. The patient was conscious before the last abdominal suture was tied.

Examination of the Tumor.—Investigation in the pathologic laboratory revealed a simple cystoma ovarii, lined by one layer of high columnar epithelium. The tumor and contents weighed 88 pounds.

Convalescence.—The lung condition seemed to be the greatest danger threatening the convalescence, as hypostatic congestion was greatly to be feared. With the hope of avoiding this the position of the patient was changed every two hours during the first forty-eight hours by alternately raising and lowering the head of the bed. Despite an extremely irregular and intermittent pulse, the convalescence was uninterrupted, and healing was perfect in every particular.

Comments.—The interesting points in the case are the age of the patient, the development of a large tumor from an organ long past physiologic activity, the ease with which the operation was done with but little general anesthetic, and the speedy convalescence, despite diseased arteries and an unfavorable condition of the lungs. Attention is especially called to the possibility of preventing serious pulmonary complications, by a frequent change in position. This is not a new procedure, but it has not been extensively employed, and seems worthy of emphasis. To be effective, one end of the bed should be elevated by chairs placed under the bedposts, the patient being supported from slipping by shoulder and perineal straps. The head should be alternately raised and lowered in this way every two hours. In aged patients, with poor circulation and edematous lungs, this method of preventing hypostatic congestion and subsequent pneumonia, would seem of value.

FATAL BROMOFORM POISONING.

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The facts of the following case were obtained by courtesy of the attending physician, Dr. C. A. Hurd.

Previous Illness.—A girl of 2 years and 9 months had been sick for about two weeks with whooping cough, with severe coughing and vomiting spells at frequent intervals day and night. Blood was vomited at times.

Treatment.—Belladonna and antipyrin had been given without much effect on the spasms. On the evening of July 21 the child was put on two-drop doses of bromoform every four hours with decided benefit, the patient sleeping comparatively undisturbed that night; the next day she was playing about the house and yard, with only an occasional attack.

Poisoning.—About 7 p. m. of the 22d the child went to a drawer, took out the bottle of bromoform and swallowed some of the contents. The burning sensation caused the child to scream, which attracted the attention of the mother, and she at once took the bottle away from the child. Some of the liquid had been spilled on the floor and on the child's dress. About half the contents of the 3-dram bottle remained.

Symptoms.—For several minutes the child seemed to be unaffected, but the mother attempted to telephone to town, about three miles distant, for a physician, and the telephone failing to work she called the child's father. By that time the child began to show signs of drowsiness. As soon as a team could be made ready they drove to town with the child, who was then apparently lifeless or in a condition of deep narcosis. They reached Dr. Hurd's Hospital about 8:30 p. m. No pulsation could be detected at the wrist or carotids and no sound of heart action was at any time to be detected.

Treatment.—Strychnia and whisky were injected hypodermically, the stomach washed out, the head lowered and artificial respiration begun. The only encouraging symptoms were occasional spasmodic gasping attempts to breathe. The breath smelled strongly of bromoform. The pupils were widely dilated. There was no cyanosis until after about three hours, when the body began to get cold and the lips and fingernails blue. It was not until then that artificial respiration was abandoned.

Dose.—The amount taken can only be estimated. Of the three drams prescribed 10 or 12 drops had previously been taken. About 1½ drams remained in the bottle, and an uncertain amount had been spilled, but by conservative estimate 30 or 40 minims was the maximum amount swallowed.

Comments.—No very accurate conclusions can be drawn from this case, except that bromoform is a dangerous drug, probably more poisonous than chloroform, and should be handled with care. Its action was comparatively rapid and apparently paralyzed the heart's action and vasomotor system more rapidly and completely than it did respiration. It was effective in controlling the spasms of whooping cough, when used in full doses, but its agreeable taste makes it a temptation to the child who has access to it.

New Instrument.

A NEW AIR-DILATING URETHROSCOPE.

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For some time past I have been an advocate of the more general use of the endoscope in the treatment of chronic urethritis and urethral lesions. While my work with the various instruments designed for endoscopy has given me good results, I have at the same time felt the need of improved technic in this work. The advent of the mignon lamp of Koch of Rochester was a distinct advance over the platinum loop of the Oberländer instrument and the various forms of reflected-light instruments. The application of the air-dilating principle of Schall and Fenwick, while an advantage, was more than offset by the disadvantages of the means of illumination.

Realizing the advantages of air-dilatation applied to urethroscopy and of the cold lamps made in this country, I devised the instrument which is here illustrated, and which, I believe, combines the valuable features of former instruments, while being free from their disadvantages. The instrument has for its component parts an endoscopic tube having the points of excellence of the Guiteras tube; a universal head which is attachable to any size of endoscopic tube by a screw joint and which has the valve attachment for the dilating bulbs; a light-carrier having at its distal end a mignon lamp and fitting into the universal head by a bevel joint, insuring an air-tight connection; an obturator having a universal handle and a glass window fitting into the light-carrier by a bevel joint. The light-carrier is adjustable to any size of endoscopic tube by means of a screw connection between the light-carrier shaft and handle.

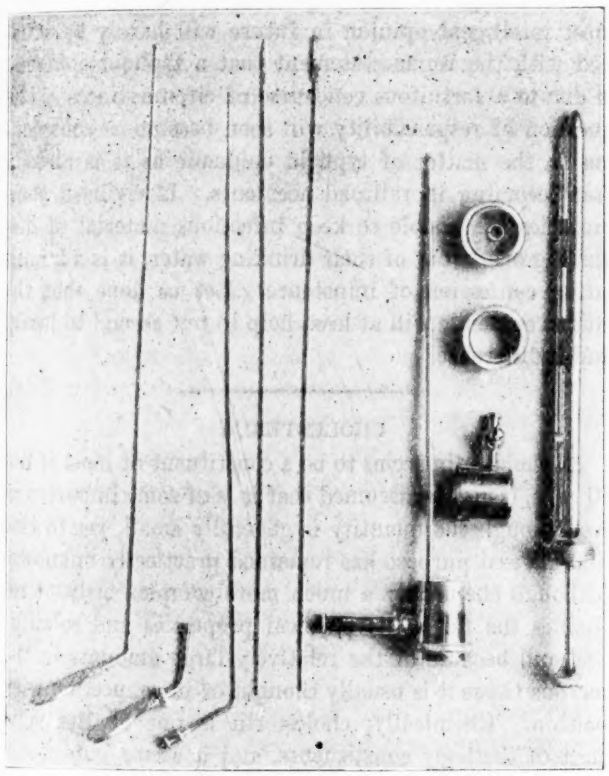

Fig. 1.—Aero-urethroscope. 1. Tube with obturator inserted. 2. Universal head with stop cock attachment. 3. Light-carrier. 4. Observation window. 5. Operating window. 6 and 7. Knives. 8. Handle for knives. 9. Canula. 10. Probe.

The possibilities of air-dilatation appealed to me so forcibly that I added to the instrument a glass operating window which has in its center a metal adjustable gland, fitted with a rubber gasket, insuring an air-tight contact between the operating instrument and the gasket and yet permitting of all necessary mobility on the part of the instrument in use. The set of operating instruments, so far, comprises two knives, a canula and a probe, and their uses are obvious.

The technic of endoscopy with this instrument is simple. The tube to be used is selected and the universal head is attached. The light-carrier is then placed in the universal head and so adjusted by the handle that the distal end of the light-carrier falls into the groove in the distal end of the tube. The obturator is then inserted, the connection made with the battery and the instrument introduced the required distance. Then the obturator is withdrawn and the excess secretion mopped up. The bevel window is inserted and, the dilating bulbs having been attached, the penis is grasped in the left hand while pressure on the bulbs with the right makes dilatation. The collapsed, stellate folds of the urethra are obliterated and the urethra comes into view as a tube, every point on the walls of which can be accurately observed. If the endoscope was properly selected and an excess of air pressure is not caused, no air escapes along the sides of the instrument.

On account of the extensive area brought under observation any lesions contrast strongly with the adjacent healthy mucosa. Cystic follicles form projecting points. Congestions or erosions are easily recognized in character and extent. Submucous infiltrations form irregularities in the lumen of the urethra.

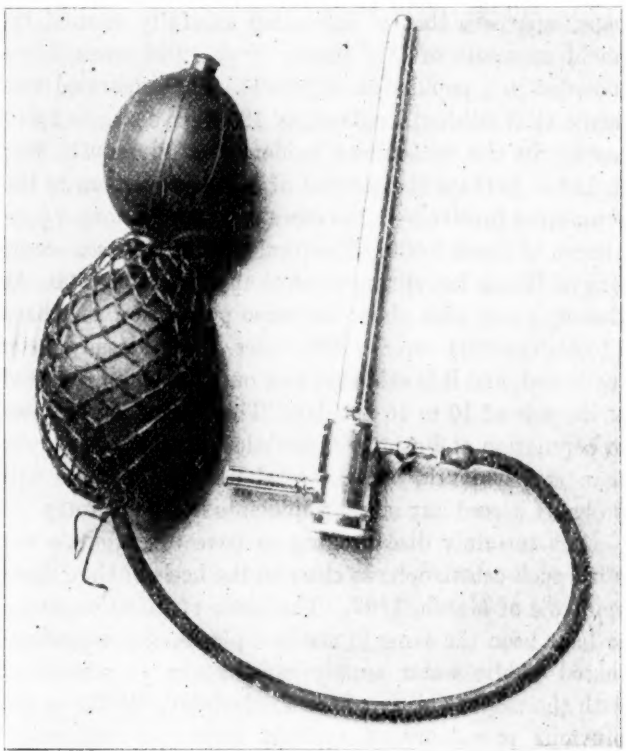

Fig. 2.—Aero-urethroscope, with universal head and light carrier in place. Obturator withdrawn and observation window and dilating bulbs attached.

In two locations, especially, I have found this instrument of unusual service, namely, the bulbous and prostatic portions of the canal. It is in these points of physiologic dilatability that urethroscopy with the ordinary urethroscope has proven unsatisfactory, the urethra falling into such folds as to conceal gross lesions despite skillful manipulation. Endoscopy of the prostatic urethra has proven particularly difficult on account of the wide dilatability of this region as compared with the narrow membranous portion. Naturally, an endoscope which would pass comfortably the membranous urethra would find the prostatic portion thrown into voluminous folds. On account of the rigidity imparted by the triangular ligament it is practically impossible by any manipulation to obliterate these folds. With this instrument the constriction of the compressor in front and the tonic spasm of the internal sphincter behind form an ideal location for air-dilatation, every point in the prostatic urethra falling into view. The bladder should be emptied before attempting posterior endoscopy.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

SATURDAY, DECEMBER 19, 1903.

THE TYPHOID EPIDEMIC AT BUTLER, PA.

The calamitous outbreak of typhoid fever at Butler must be ranked not only as one of the most extensive epidemics of the kind that has ever occurred in this country, but as one of the most extensive on record anywhere. Several of the largest epidemics of recent times have occurred in England and the United States. The magnitude of the Maidstone (England) epidemic, perhaps, surpasses that of any other carefully studied typhoid epidemic of late years, about 1,900 cases being recorded in a population of 35,000. The celebrated epidemic at Worthing, England, in 1893, gave rise to 1,317 cases. In the well-known epidemic at Plymouth, Pa., in 1885—perhaps the severest of all in proportion to the population involved—1,104 cases developed among a population of about 8,000. The total number of cases occurring at Ithaca last spring reached approximately 900. At Butler, a city with about the same population as Ithaca (15,000-16,000) over 1,200 cases have already been registered, and it is said that new ones are being reported at the rate of 10 to 15 per day. The proportion of cases to population at Butler will doubtless be somewhat lower than at Plymouth, but the total number of cases will probably exceed any similar epidemic in this country.

It is certainly discouraging to have to chronicle another such catastrophe so close on the heels of the Ithaca epidemic of March, 1903. The mode of infection seems to have been the same in the two places, and a contaminated public water supply must again be accredited with the responsibility of the misfortune. So far as the previous prevalence of typhoid fever was concerned, Butler seems to have had less warning than Ithaca; otherwise the conditions preceding the outburst appear to have been dishearteningly similar. The train has long been laid. The familiar and critical situation of an unpoliced, unprotected watershed on which cases of typhoid fever have been allowed to develop unwatched and apparently without efficient control of any kind, has finally culminated in the present disaster.

In pessimistic moments one is tempted to conjecture how many other smoldering foci of typhoid exist in various parts of the country, only waiting for a series of untoward accidents to fan them into flame.

It is perhaps a legitimate inquiry as to just how many such catastrophes will be needed to implant a sense of responsibility in the minds of water-works officials and local boards of health. In some communities it is not a matter of great difficulty to recover large damages from corporate authorities for personal injuries due to broken sidewalks or defective highways. Sooner or later, we believe, a similar sensitiveness will be aroused concerning the liability of some responsible organization for the distribution of infected drinking water. In the light of our present knowledge of sanitary matters and modes of infection one is disposed to ask whether it is reasonable for those in charge of the public health of a community to allow themselves to be diverted by new systems of plumbing and garbage disposal away from the vitally important matters of water supply and milk supply. The usual vehicles of infection and methods of transfer of specific disease germs are now so clearly understood that public opinion will not content itself much longer with the explanation of an unpreventable accident. With two such terribly illuminating examples as Ithaca and Butler to light the way to reform, it is evident that the most intelligent opinion in future will hardly be satisfied with the vague statement that a typhoid epidemic is due to a fortuitous concourse of circumstances. The question of responsibility will soon become as conspicuous in the matter of typhoid epidemic as it is already fast becoming in railroad accidents. If civilized communities are unable to keep infectious material of disgusting origin out of their drinking water, it is a humiliating confession of impotence. Let us hope that the Butler epidemic will at least help to put an end to laxity and indifference.

CHOLESTERIN.

As cholesterin seems to be a constituent of most if not all cells, it may be assumed that it is of some importance, even though the quantity is generally small, yet to this time its real purpose has remained practically unknown. Although chemically a much more complex body, it resembles the fat in its physical properties and solubilities, and because of the relatively large amounts in the nervous tissue it is usually thought of in connection with lecithin. Chemically, cholesterin is one of the most inert of the body constituents, and it seems improbable that it plays any part in metabolic processes, for which reason there have been those who have been content to consider cholesterin as merely a by-product in cell metabolism, which was present in the cells in recognizable quantities, chiefly because its resistance to alteration made its removal slow. It is probably because of this resistance to chemical alteration that cholesterin is so frequently found in areas of slow cell-destruction, such as healing tubercles, atheromatous areas, inspissated pus, etc.

The importance of cholesterin, not being in its chemical properties, therefore, is possibly to be found in its physical properties, and there is accumulating good reason for believing that this is the case. We have learned that the penetrability of various sorts of cells differs for different substances, and on this probably de-

pends an important part of cell individuality in physiologic manifestations. Since cholesterin is, like the fats and waxes in general, resistant to permeation by most fluids, it will undoubtedly make much difference in the physical properties of a cell whether it has much or little cholesterin in its make-up. We may here recall the important observation of Overton that the anesthetics are solvents of fatty substances, including cholesterin and lecithin, leading to the suggestion that it is the solvent action that accounts for the anesthetic effect, the nervous tissues being richest of all tissues in lecithin and cholesterin. Another observation indicating the importance of cholesterin in a physical way refers to the red blood corpuscles, which are also particularly rich in cholesterin. It would seem that it is the cholesterin that is chiefly, if not solely, attacked by certain agents that produce hemolysis. The vegetable hemolytic poison, saponin, seems to produce its effects by action on the cholesterin, and therefore the presence of free cholesterin in a fluid containing corpuscles will protect them from hemolysis by saturating the poison and preventing its entering or combining with the corpuscles. This, it will be noted, is in full correspondence with the usual conception of the nature of the neutralization of toxin by antitoxin, the antitoxin being the particular substance of the cell with which the toxin combines. Other hemolytic poisons, but not all, have been found to be similarly affected by cholesterin. It is also suggested that ether, chloroform, and bile salts, which have long been known as laking agents, are all solvents of cholesterin. Probably, therefore, the cholesterin is an important factor in retaining the hemoglobin within the erythrocytes, and it is quite likely that in other cells it has a similar effect with regard to their constitutents, not to mention the possibility of its preventing the entrance of substances from outside the cells. If cholesterin does in this way modify exchange of substances between cells and plasma it must have a most important influence on cellular metabolism.

To the practicing physician the word cholesterin usually suggests gallstones, for in this form alone has any practical importance generally been assigned to this substance. The source of the cholesterin that forms the gallstones has been a matter of contention for many years. At first it was widely held that a chemical change in the bile, perhaps because of errors in diet, led to precipitation of the small quantity of cholesterin that it contains normally. Naunyn, however, supported the theory that the chief source of bile cholesterin was in the columnar epithelium lining the bile tracts rather than the liver cells, and that in chronic inflammation it was produced in excess until a deposition occurred on some foreign body, such as desquamated epithelial cells or mucus, and that after the concretion was once started further production of cholesterin was stimulated by the irritation of the stone itself. The development of the bacteriology of cholelithiasis has corroborated this view to the extent of indicating the importance of chronic inflammation rather than dietary considerations. Recent studies by Wakeman[1] in Herter's laboratory strengthen Naunyn's theory, for he found that sterile inflammation produced by injecting corrosive sublimate, phenol and ricin into the gall bladder resulted in the presence of several times the normal proportion of cholesterin in the cystic bile, probably derived from the degenerating epithelium of the mucosa. This being the case, we can understand readily the occurrence of gallstones in chronic cholecystitis, and their usual multiplicity is perhaps partly due to the establishment of a vicious circle, the irritation by one concretion leading to conditions favorable for the formation of others.

TUBERCULOUS AND NON-TUBERCULOUS DISEASES OF THE RESPIRATORY TRACT.

We are all familiar with the fact first pointed out by THE JOURNAL nearly four years ago (April 14, 1900), that the deaths from acute non-tuberculous pulmonary affections, especially pneumonia and influenza, have been growing more frequent of late years, if we can depend on the published statistics, while the deaths from tuberculous diseases have been decreasing. This last fact we impute to our improved methods of public hygiene, popular education as to the prevention of tuberculosis, fresh-air sanatoria, etc. The great increase in the mortality from the non-tuberculous diseases we find ourselves unable to explain.

Ascher[2] presents some statistical evidence on this question and suggests an interpretation of the evidence. After a warning against the use of statistics by any but experts, he points out certain facts obtained by a careful study of the mortality statistics of Prussia between the years 1875 and 1901, comparing the deaths from tuberculosis with those from the other diseases of the respiratory tract (bronchitis, catarrh of the lungs, inflammation of the lungs and pleura, etc.). The curves representing the deaths from these two classes of lung disease show graphically a decline in the deaths from tuberculosis, beginning in the year 1880, and an increase in the deaths from the other respiratory diseases, beginning in the very same year. The two curves cross in 1890, and from 1892 on the curve representing the non-tuberculous is always higher than the curve representing the tuberculous. Nor is this due simply to the diminution in the death rate of tuberculosis. There is an actual as well as a relative increase in the non-tuberculous diseases, as is shown by the fact that the combined death rates from these two classes were the same in 1901 as they were in 1875. During the first five years of the period in question, i. e., from 1875 to 1879, the mortality from both tuberculous and non-tuberculous diseases of the respiratory tract was 48.29 per 10,000 living; and during the last five years, 1897 to 1901, in spite of

1. Trans. Assn. Amer. Physic., 1903, vi, 162.
2. Berliner klinische Wochenschrift, Nov. 2, 1903.

the diminution in the deaths from tuberculosis, it was 48.03, almost exactly the same. Rahts, the statistician for the Imperial Health Office of Germany, finds that the same change has taken place in the rest of Germany, outside of Prussia, and also in England.

Ascher gives less credit to the modern crusade against tuberculosis than it is accustomed to receive. As the fall in the death rate from tuberculosis began in 1880, two years before Koch's discovery of the *Bacillus tuberculosis*, eight or nine years before Cornet's work and at least ten years before Flügge's, it is evident that modern methods of isolation, prophylaxis, sanatorium treatment, etc., can not be entirely responsible for it. The increase in national prosperity has undoubtedly something to do with it, leading as it does to improved conditions among the working classes and to lessened emigration, for emigration always raises the apparent death rate by removing a certain proportion of healthy young adults. There are, however, deeper causes than these. That the decline in mortality from tuberculous diseases of the lungs is intimately connected with the increase in mortality from the non-tuberculous, seems to be proved by these Prussian statistics, which show that while deaths from tuberculosis in middle life are decreasing, deaths in early childhood and old age from non-tuberculous diseases of the lungs are steadily increasing, and also that the acute diseases of the lungs are gradually replacing the chronic. This must not be regarded as a mere coincidence. The removal during early childhood of an increasing number of persons with "predisposed lungs," lessens the number of those who would contract tuberculosis during later life. Indeed, it is claimed by Rahts that in those regions where infant mortality is very high, the death rate from tuberculosis is comparatively low. (In the Chicago health reports, on the other hand, the increase of pneumonia is coincident with decreased infant mortality.) As for the increase in the deaths from acute inflammatory diseases of the lungs during old age, that probably has a direct relation to the diminution in the deaths from chronic tuberculosis, the persons with chronic tuberculosis succumbing finally to influenza or pneumonia. The increasingly acute character of lung diseases is shown also by the fact that fewer tuberculous patients reach the age of fifty.

It seems remarkable that in these days of scientific research and of great advance in public hygiene, we should be utterly unable to control or even to account for this enormous, unprecedented increase in acute non-tuberculous diseases of the lungs. Ascher accuses the medical world of approaching the problems of hygiene from one side only—from the point of view of the chemist and bacteriologist—forgetting that, just as internal medicine requires not only experimental pathology but clinical work, so public hygiene requires not only investigations in the laboratory but in sociology as well.

SPENCER AND POPULAR BIOLOGY.

The recent death of Herbert Spencer has recalled general attention especially to certain of his theories that were popular among the medical profession a generation ago. Between the time when he wrote his "Principles of Psychology" as a young man and revised the latest edition of his "Principles of Biology," Spencer's views as regards the significance of life had undergone a decided change. In discussing Spencerian principles it is the custom of many to accept his earlier immature view as representative of his opinions rather than his latest thinking. In his "Principles of Psychology" he said: "The chasm between the inorganic and the organic is being filled up; the microscope has traced down organisms to simpler and simpler forms until in the protogenes of Professor Haeckel there has been reached a type distinguishable from a fragment of albumin only by its finely granulated character." In a letter published in *Nature* (Oct. 20, 1898), Mr. Spencer said: "In my revised 'Principles of Biology' I have contended that the theory of a vital principle fails and that a physico-chemical theory of life also fails; the corollary being that in its ultimate nature life is incomprehensible."

Mr. Spencer had thus come to recognize the mystery of life and its insolubility, as have practically all the great scientists who have expressed their opinions on the subject during the last decade. While undoubtedly he was a great thinker, too much of his philosophy is brilliant theorizing rather than scientific thought that will endure. As a distinguished American zoologist said not long since, "Nature never acts according to the anticipations of the closest philosopher." The phrase Spencer so often quoted, "the survival of the fittest," became one of the shibboleths of biology, but our generation is much more interested in the origin of the fittest, which is the real biologic problem, rather than in its survival, since this is manifestly due to certain inborn qualities.

Some of his other expressions have ceased to have the significance they had. Ontogeny recapitulates philogeny is no longer considered to be a basic principle in biology. All living beings originate in a single cell, but to consider by that fact that they all begin at a point in development beyond which the single cell creatures have never gone, is utterly false to our present knowledge of biology. Between the single cell fertilized human ovum from which man is to develop and the ameba there is an immense distinction, not only in possibilities, but also in physiologic constitution, in chemical composition and even in the physical arrangement of the materials. It is patient observation, not brilliant theory, that brings us enduring advance in science.

HOME MANAGEMENT OF TUBERCULOSIS.

The second Phipps lecture, delivered by Dr. Osler, December 3, had for its subject "The Home in Its Relation to the Tuberculosis Problem." A fact not always appreciated in the present enthusiastic crusade against

tuberculosis is that 98 per cent. of the sufferers from this scourge can not receive the sanatorium treatment which is now so much to the front as the remedy *par excellence* for this disease. It is only in the home management that this large per cent. of sufferers can have any hope, and this hope depends on the family physician. It was a good idea on Dr. Osler's part to call attention to this fact, for it is in this particular direction that the principal victory over the disease must be won. Sanatoriums must have an educating effect and are undoubtedly of immense value to the few that are able to receive their direct benefits, but if we are to look for any great decrease of consumption it must be mainly due to the general practitioner in his management of the cases that come under his care. Dr. Osler accepts the view that nearly all of us are infected, and that in old age but few of us will be found free from some focus of the disease. He also refers to the unsatisfactory present status of the theories of the origin of the disorder, and does not feel authorized to accept the recently enunciated views of Behring and others as to the incorrectness of the hitherto prevalent theory of air infection. While it matters a great deal how tuberculosis is acquired, nevertheless if its acquirement is such a universal thing the principal task in the fight against the disease must be to strengthen resistance. It is encouraging to think that about nine-tenths of all those that are attacked at some time in their lives must recover to account for the statistics as we have them, but the other one-tenth should be reduced to a still lesser fraction at the earliest possible moment. Dr. Osler's remarks are timely in that they bring out certain circumstances that are not always duly estimated by the general public or even by the members of our profession.

TRITURATION IN LIQUID AIR.

A study of the vital properties of organized matter is a complex one, and whatever may lead to doing away with some of its embarrassments is a certain advance. We hold that the vital functions of cells depend on the specific physiologic and chemical arrangements and that the ordinary methods of biologic and chemical research destroy these more or less. Attention is called to this difficulty in a recent communication[1] to the British Association for the Advancement of Science by Prof. MacFadyen, who has sought out a suitable method for obtaining the cell plasma for experimental work, as far as possible unaffected by physical and chemical agencies which would disturb its vital qualities. The chief previous work which has sought to avoid these objections is that on the yeast plant by Buchner, who, by mechanical rupture of the cells and release of their content with preservation of its properties, obtained some valuable results. The desiderata are rapid disintegration and the avoidance of heat and other interfering elements. Buchner's method produced good results, but MacFadyen has sought to still further improve on it. The method he has employed has been by the use of trituration in liquid air, and the most striking results he has obtained are with the bacteria by this method. It is well known that the bacteria are not immediately devitalized by intense cold, but are put in a position which permits of their rapid and effective trituration, thus releasing their cell contents. He has found by employing this method that certain bacteria possess intracellular toxins which are not otherwise obtained. Among these may be enumerated the typhoid bacillus and pus organisms. Another peculiar fact that he has observed is that in regard to the photogenic bacteria which lose their power of giving out light after trituration notwithstanding the unaltered condition of the plasma, thus indicating that the light-producing power is a vital one in some way connected with their organized, intact condition and not dependent only on their chemical and physical constitution. The brain of an animal dying of rabies loses also its infective property by trituration in liquid air, which he thinks supports the idea of an organized virus in this disease. Some new aspects of immunity are obtained from the intercellular standpoint and the method throughout seems to be new and withal one of decided value. Some of MacFadyen's results have been already referred to,[2] and the future prospects of the method are certainly encouraging.

1. Nature, October 22.

THE DIPHTHERIA BACILLUS AS A CAUSE OF GANGRENE OF THE SKIN.

In 1902, Sailer[3] reported two cases of gangrenous stomatitis following typhoid fever, in which the bacillus of diphtheria was found in the gangrenous patches. One of his patients, a boy, aged fourteen years, died in spite of the administration of 12,000 units of antitoxin; the other patient, a girl, aged eight years, recovered after the use of antitoxin. The bacillus of diphtheria has been found by several other observers in cases of noma of the mouth, as well as of the vulva. It seems, however, that noma is not the only gangrenous affection that may follow infection with this bacillus. Bernard and Jacob[4] have recently reported the case of a soldier, aged twenty-five years, who presented two furuncles on his left thigh. In a few days these boils opened and discharged, but the wounds, instead of healing, became larger, spread and appeared gangrenous, so that the patient had to enter the hospital. On admission there were scars, ulcers and pustules of a gangrenous nature on the skin, from which the *Staphylococcus pyogenes aureus* and a streptococcus were obtained. There was no apparent explanation for the condition, as the man had always been well and presented no pathologic conditions on examination. The skin lesions spread and increased in number and, about twenty-five days later, a second bacteriologic examination was made and diphtheria bacilli were found, as well as the staphylococcus and the streptococcus previously described. No diphtheria bacilli were found in the mouth, the pharynx or the nasal fossæ, nor, so far as could be learned, had he been in contact with a patient suffering from diphtheria. The patient was given 30 c.c. of diphtheria antitoxic serum in three doses of 10 c.c. each, after which the lesions cicatrized very rapidly. Cases of gangrene of the skin have been reported as the result of a pure staphylococcus infection, as a result of an infection with a pure culture of the diphtheria

2. THE JOURNAL A. M. A., p. 1416.
3. Am. Jour. Med. Sci., January, 1902.
4. Arch. Méd. Exp. et d'Anat. Path., September, 1903.

bacillus, and as a result of a symbiosis of these two organisms. The authors have collected a number of cases belonging to each of these three classes. The diagnosis of such an etiologic factor in cutaneous gangrene can be made only after complete bacteriologic examination. The case reported in the paper mentioned, therefore, may serve as an illustration of the value of bacteriologic studies in similar cases. The case also shows that disseminated gangrene of the skin is not a single nosologic entity, but that one form, at least, may be due to an infection with the diphtheria bacillus.

Medical News.

CALIFORNIA.

Dysentery Epidemic.—Dysentery is said to be epidemic in Caspar, Mendocino County. Several deaths have occurred.

Italian Hospital to Open.—The Italian Hospital, San Francisco, will soon be ready to receive patients. It is located in the old Toland College building, which is being remodeled.

Personal.—Dr. Charles C. O'Donnell, San Francisco, accompanied by his niece, has started on a trip round the world.——Dr. William D. Dilworth, Oxnard, has sold his practice and will spend two years in special studies in New York and Europe.

New Society.—A new and exclusive scientific society, with a membership limited to 40, has been organized in Los Angeles, known as the "Clinical and Pathological Society." The following officers were elected: Dr. Andrew S. Lobingier, Los Angeles, president; Drs. Fitch C. E. Mattison, Pasadena, and Jay H. Utley, Los Angeles, vice-presidents; Dr. Frank D. Bullard, Los Angeles, secretary; Dr. John R. Haynes, Los Angeles, treasurer, and Drs. Ernest W. Fleming and Milbank Johnson, Los Angeles, executive committee.

ILLINOIS.

Lays Cornerstone.—With due ceremony Rev. D. L. Crowe laid the cornerstone of the new St. Francis Hospital, Kewanee, December 8.

Data Wanted on Epilepsy.—The State Board of Charities has sent a circular letter to each physician in the state asking for definite data regarding epilepsy in the state.

Octogenarian Honored.—On the occasion of his eightieth birthday anniversary, December 2, Dr. William J. Chenoweth, Decatur, received a greeting signed by all the medical men of the city congratulating him and bearing good wishes.

Personal.—Dr. Samuel C. Plummer, Chicago, surgeon-in-chief of the Rock Island system, has been made secretary of the association of surgeons of that road.——Dr. Thomas B. Knox, Quincy, has succeeded Dr. Le Roy P. Barstow as physician of the township.——Dr. John T. Spence, Camp Point, has been chosen physician of Adams County.

Contagious Diseases.—Canton reports 100 cases of typhoid fever and 10 deaths.——Scarlet fever and diphtheria are epidemic at Geneva, and the public schools have been closed. Since October 25 there have been 17 cases of diphtheria in Pekin.——An outbreak of smallpox is reported from Locust township, Christian County.——Prevalence of scarlet fever has caused the closure of Palmer schools.——Lakeside, Winnetka, Evanston and Glencoe are alarmed because of the presence of scarlet fever.——Scarlet fever is said to be raging near Bunker Hill. In one family three deaths have occurred.——After a strenuous battle for two months smallpox has been stamped out of Moline. Twenty-six cases in all were reported.——At Millersville, 22 cases of smallpox have been reported.——Springfield has 14 cases of diphtheria and 21 cases of scarlet fever.

Chicago.

A Successful Auction.—At the auction of boxes for the charity ball, of which St. Luke's Hospital is the beneficiary, $15,450 was realized.

Reynolds Reappointed.—The mayor has reappointed Dr. Arthur R. Reynolds commissioner of health, and by a unanimous vote, on December 14, the city council confirmed the appointment.

New Hospitals.—The management of St. Joseph's Orphan Asylum has had plans prepared for a three-story hospital on the northwest side, to cost $20,000.——The Hospital Sisters of St. Joseph, Montreal, will build on land acquired in Englewood, a hospital to be called Hotel Dieu, and to cost $80,000.

December Health.—Thus far in the month the public health, as measured by the death rate, has been satisfactory. The average December rate for the previous decade was 15.24 per 1,000; for the first twelve days of December, 1903, the rate has been 13.36 per 1,000, or 12.3 per cent. lower than the average.

Personal.—Drs. William Engelbach and G. W. C. Parker, retiring internes at the County Hospital, will continue their studies in Vienna.——Dr. Craig R. Snyder, a former interne at the hospital, intends to enter the medical department of the Army.——Dr. Joseph F. Biehn, as the result of a competitive examination, has been certified by the civil service commission as city bacteriologist and superintendent of the milk and food inspection bureau.

Prophecy Fulfilled.—The forecast of the Department of Health that there would, between Nov. 1, 1903, and May 31, 1904, be an excess of pneumonia deaths over deaths from consumption in the proportion of more than 60 per cent. of the former to less than 40 per cent. of the latter, is fully sustained by the figures for the first 42 days of the period. During these six weeks there have been 286 deaths reported from consumption and 506 from pneumonia—a proportion of 36.2 per cent. for consumption and 63.8 per cent. for pneumonia.

Antitoxin Reduces Diphtheria Mortality.—The Department of Health, in its latest bulletin, thus comments on the value of antitoxin in diphtheria:

> Since the introduction of antitoxin in the treatment and prevention of diphtheria its mortality rate has been reduced by nearly one-half—that is, from an annual average of 6.25 deaths in every 10,000 of the population in the seven years 1889-1895 to an annual average of 3.24 in the seven years 1896-1902 of antitoxin treatment. But this is not enough.
>
> The seven years' experience clearly proves that no child should—that no child ever did die of diphtheria when treated early enough with a sufficient quantity of good antitoxin. The pre-antitoxin mortality of diphtheria in Chicago was about 35 deaths in every 100 cases of the disease. In the many thousands of cases among the poor and destitute treated by the department inspectors under the most adverse conditions the rate for the whole number has been less than 7 deaths in the 100 cases. And there are many physicians in Chicago and elsewhere who have records of hundreds of cases with a rate of less than 2 deaths per 100.

INDIANA.

Medical Library for Southern Indiana.—At a meeting of the Vanderburgh County Medical Association, November 17, steps toward the founding of a public medical library in Evansville were taken.

Will Not Endorse Contract Services.—At the regular meeting of the Delaware County Medical Society, December 4, the society took decided action against the indorsement of the "Red Cross Medical Association," recently organized in this and other counties of the state, on the grounds that it was impracticable, unethical and a form of contract service.

Personal.—Dr. Joseph G. Rogers, superintendent of the Northern Indiana Hospital for the Insane, Logansport, has had his salary increased from $2,000 to $2,500.——Dr. J. Rudolph Yung has been appointed police surgeon of Terre Haute, vice Dr. Myron A. Boor, who has been made smallpox physician.——Dr. Arvill W. Bitting, Lafayette, who was injured in a railway accident at Indianapolis, has returned home recovered.——Dr. August Knoefel, New Albany, has been made county physician of Floyd County.

Epidemic Diphtheria.—Diphtheria has caused the schools at New Haven to be closed.——At Michigan City a parochial school has been closed on account of the prevalence of the disease; four deaths have occurred.——The disease is prevalent at Emison and Oaktown and is said to be raging in Spencer County.——School at District No. 3, Hutton, has been closed on account of the disease.——Colfax County schools are said to be in unsanitary condition and the State Board of Health has been asked to investigate.——At Tell City two deaths have occurred.——Elwood has several cases.

IOWA.

Smallpox at Arlington.—There are said to be 50 cases of smallpox at Arlington; the city has been thoroughly quarantined, and it is hoped that the disease will not spread.

Ante-Nuptial Health Certificates.—The Iowa Society for Suppression of Disease and Degeneracy has prepared a bill to be proposed, providing for a physician's certificate of examination before a marriage license can be issued.

Personal.—Dr. Charles H. Hoffman, Des Moines, is suffering from a severe infection of the right arm, the result of an

autopsy wound.——**Dr. Emmett C. Chapman, Fort Madison,** has been elected president of the Santa Fe Hospital Association.——Dr. Malcom N. McNaughton, Villisca, has sold his practice to Dr. F. S. Williams, of Chapman, Kan.

Stops Indiscriminate Sample Distribution.—The Fort Dodge council has passed an ordinance prohibiting "the distribution of any sample packages of patent medicines, pills or other free samples of any preparation whatever for medicinal purposes by way of advertisement, by leaving the same on the porches or doorsteps of any of the residences or dwelling houses, or business houses, or on any streets, sidewalks or lots within the corporate limits of the city of Fort Dodge, Iowa." Such samples may be distributed, however, the ordinance says, by placing them in the hands of adult persons or in some safe place intended for that purpose.

KANSAS.

Office Raided; Whiskey Seized.—The office of Dr. Samuel B. Wilson, Olathe, was recently raided, 40 gallons of whiskey seized, and the physician placed under arrest on 13 charges of selling whiskey.

Hospital on Fire.—A fire occurred at the Leavenworth Hospital, December 7, which destroyed the roof, and damaged the building to the extent of about $3,000. The twenty patients were safely removed.

Smallpox.—Goodland has about 15 cases, and through lack of efficient quarantine, the disease has been carried to Benkelman township, where 16 cases have been reported.——Cherokee County reports 7 cases.

Physician Wins Case.—The suit brought by Frank Oldham against Dr. Lewis H. Munn, Topeka, in which the plaintiff alleged malpractice, was dismissed for lack of evidence, before the trial had reached its natural end.

Personal.—Dr. Edward P. Chase, Shawnee, was seriously injured, December 10, by being struck on the head with a scale-weight.——Dr. Francis M. Thomas, Leavenworth, surgeon of the federal prison, has been seriously ill with pulmonary hemorrhages, but is now reported as improving.

KENTUCKY.

Louisville City Hospital.—The Board of Public Safety has made Julius C. Vogt superintendent of the Louisville City Hospital, vice Dr. Ellis Duncan, removed.

Threatens Quarantine.—West Virginia has been notified by the Kentucky State Board of Health that unless precautions are taken to protect Kentucky against smallpox patients coming from the former state, a quarantine will be established. All who enter Kentucky will be vaccinated.

Smallpox.—Kenova has quarantined against Ceredo.——There are 8 new cases of the disease at Willard.——The disease is reported at two points in Whitley County.——In Frankfort the only cases since September have been four in one family, all fatal.——Richmond has 11 cases among negroes.——At Smith's Grove four cases are reported in one family.

Personal.—Dr. Thomas J. Slaton, Greenville, recently sustained an injury to his ankle in a runaway.——Dr. Irvin Abell has gone to British Honduras and Brazil to recuperate from a serious attack of sepsis.——Dr. Charles L. Moir, Louisville, has been appointed secretary of the City Hospital, vice Dr. George B. Jenkins, resigned.——Dr. James W. Crowley, Newport, has been elected president of the local board of health.——Drs. Joseph M. Mathews and Bernard Asman have reassociated themselves for the practice of their specialty. Dr. Asman recently returned from Europe.

LOUISIANA.

Personal.—Dr. John J. Archinard, New Orleans, has been elected house surgeon of the Old Soldiers' Home.

Tulane Opens.—The medical department of Tulane University, New Orleans, opened for the year, October 26, with an address by Dr. Matas.

Rabies To Be Treated at Charity Hospital.—At a recent meeting of the board of administrators of Charity Hospital, New Orleans, the report of the special committee appointed to investigate and advise the board of the expense of establishing and maintaining a department for the treatment and cure of hydrophobia was submitted and unanimously adopted. The committee was instructed to carry out its plans.

Society Elects Officers.—At the annual election of the Orleans Parish Medical Society, December 12, the following officers were elected: President, Dr. Marcus J. Magruder; vice-presidents, Dr. Jacob A. Storck, William M. Perkins, and Otto Joachim; secretary, Dr. Samuel M. D. Clark; treasurer, Dr. Edward J. Huhner; librarian, Dr. Homer Dupuy, and additional directors, Drs. Edwin J. Graner, Eugene H. Walet and Morgan M. Lowe, all of New Orleans.

MARYLAND.

Physicians' Homes Burn.—The dwelling-houses of Dr. Benjamin M. Price, near Mt. Carmel, and of Dr. S. B. Milford, at Poolesville, were destroyed by fire December 8.

Try to Enforce Laws.—The State Board of Health is trying to enforce the law requiring registration of births. It is also discussing a school for health officers to be held annually.

Smallpox at Quarantine.—Quarantine Physician Heiskell reports 51 cases of smallpox cared for this year at the hospital, with two deaths. Forty-one were brought from Baltimore and 10 from Homburgville, in Baltimore County, where the disease broke out in a camp last summer.

State Hospital Report.—Dr. J. Clement Clark reports 515 patients in Springfield State Hospital for the Insane, November 30, 290 males and 225 females. The typhoid outbreak has subsided under isolation, disinfection and sterilization of linen, etc. An isolation cottage is urged for infectious diseases.

Baltimore.

Money for Hospital.—By the will of Mrs. Mary C. Bailey $1,000 was left to the Nursery and Child's Hospital.

Gilman to Resign.—Dr. D. C. Gilman has announced his intention of resigning the presidency of the Carnegie Institution at Washington, next year.

Personal.—Dr. William B. Perry was elected to take charge of the surgical and gynecological departments of the Northeastern Dispensary, December 9.——Dr. José L. Hirsh has been elected president, and Dr. John R. Abercrombie, secretary, of the University of Maryland Medical Societies.

Tuberculosis Exposition.—The executive committee decided on January 25 as the date of the opening of the display. Interest is manifested all over the United States in the display. Many state boards and city health departments and hospitals and sanatoria have promised special exhibits, and there will be contributions from Germany, England, Holland, France, Belgium, Austria and Russia. Applications are being received from manufacturers for space for apparatus and devices. The pathologic exhibit will be particularly fine. The exposition will last a week, and there will be daily lectures. A meeting of the executive and general committees was held December 9. It was announced that the scope of the exposition had far outgrown the original plans, and the interest was so widespread that it had now assumed national importance. A number of addresses was made, and several subcommittees were appointed to take charge of the different branches of the work, A committee of citizens has been appointed, and $1,500 will be raised for expenses. McCoy Hall has been offered by the Johns Hopkins University for the display.

OHIO.

Starling Student Dies.—Nathaniel C. Keener of Uniontown, Pa., a senior student at Starling Medical College, Columbus, died at Mount Carmel Hospital in that city, December 5, from appendicitis.

Elects Officers.—The Marion County Medical Society met at Marion, December 1, and elected Dr. A. Melville Crane, president; Dr. Robert C. M. Lewis, vice-president; Dr. Dana O. Weeks, secretary; Dr. Francis B. Sawyer, treasurer, and Dr. Charles E. Sawyer, member of the board of censors, all of Marion.

Personal.—Dr. Alexander W. Leuke, Cleveland, has been appointed workhouse physician, vice Dr. Frederick J. Schmoldt, resigned.——Dr. George W. Boerstler, Lancaster, who has been at St. Anthony's Hospital, Columbus, on account of an infected wound, was obliged to have the affected arm amputated near the shoulder.——Dr. William Muhlberg has been elected curator of the Cincinnati City Hospital laboratory, vice Dr. Alfred Friedlander, resigned.

Epidemic Diseases.—The public schools of Butler have been closed on account of the prevalence of measles, pertussis and varicella among the pupils.——In Cleveland, during November, 369 cases of communicable disease were reported, 205 of which were of diphtheria.——Diphtheria has broken out at the Westminster Missionary Home, Wooster.——Smallpox is said to be epidemic in North Jackson and in Phausberg; at the latter point 14 cases have rapidly developed.

PENNSYLVANIA.

Women Incorporate Hospital.—Application has been made in Common Pleas Court for a charter for the Homestead Hos-

pital, to be erected at Homestead. All the incorporators are women.

Philadelphia Hospital Dinner.—At the annual banquet of internes and ex-internes of Philadelphia Hospital, held December 1, Dr. J. Chalmers Da Costa was toastmaster, and the mayor, Director of Public Health Martin, Dr. F. X. Dercum and Dr. George E. de Schweinitz were guests of honor.

Pathologic Exhibit.—The annual exhibition meeting of the Philadelphia Pathological Society will be held in the Mutter Museum of the College of Physicians, Jan. 14, 1904. This exhibition embraces every department of human and animal pathology, with microscopic demonstrations of the gross material, and represents the pathologic material of scientific interest accumulated in the various hospitals during the year. The exhibition is open to all members of the medical profession.

Accidents and Injuries.—Dr. Karl Emmerling, Pittsburg, is recovering from the injuries received in the accident which cost Dr. Blumberg his life.——Dr. Boardman Reed, Philadelphia, who underwent an operation for appendicitis, December 2, is recovering.——Dr. Robert J. A. Irwin, Pittsburg, suffered a fracture of the left arm in an altercation with a street car conductor, December 4.——Dr. Horace G. Colley, Wilkesbarre, was seriously injured by falling through an open grating on a sidewalk, November 27.

The Typhoid Epidemic at Butler.—The situation at Butler has undergone no great change since our last issue. New cases continue to be reported by the physicians, but there is, on the whole, some falling off in number. The representatives of the Pennsylvania State Board of Health, now in charge of the situation, are engaged in making an exhaustive canvass of the town with a view to determining the precise number of cases since the onset of the epidemic. It is stated that up to December 9, 478 infected houses had been visited in connection with this census, or about two-thirds of the number in which typhoid fever is supposed to exist. From these houses a record of 1,210 cases of the disease was obtained, and 38 deaths. The total number of deaths up to the present time probably exceeds 50. An appeal to the general public was issued in the middle of the week by William Kennedy, burgess of Butler, reading as follows:

In justice to all, in behalf of the borough government and the entire people of Butler, I beg leave to state so far we have been able to help our people without a general call for outside aid. We contributed $8,000 to the relief fund and outside cities raised this amount to $16,000. We have been carefully using this since November 10. Now we are forced to admit our funds are getting low.

We feel as a committee for the relief of our suffering people that necessity compels us to issue a general appeal for outside assistance. We have been criticized in various ways. We wish to assure the public that we have been doing our very best to relieve suffering, sorrow and want. We were inexperienced in an epidemic scourge such as this is. It came on us so suddenly that it took a little time for us to realize the awful truth that has been forced on us and to prepare ourselves to best fight the epidemic. We are now thoroughly organized and working together as a committee and as a people perfectly in harmony, sympathy and kindness, as a single individual, doing all in our power to relieve the suffering and needy ones in our community. We will be able to give to the public an accurate account of all money received and expended.

It is stated that it will take $100,000 to carry us through this siege of disaster. We can not raise it. Necessity compels us to issue a general appeal for outside aid and assistance. We want the public to realize that we all have been and are doing our very best, giving time and money where needed. But we feel we have exhausted our supplies in every way, and many precious lives may still be sacrificed if outside aid is not furnished us.

We, as a people, are thankful for the aid already received and for the great sympathy shown us. If need be we will accept the criticism also. And we appeal as a stricken people, unable longer to help themselves, for aid in our distress.

WILLIAM KENNEDY, Burgess.

In response to this appeal many additional subscriptions have been made, and it is said that up to December 12 contributions amounting to over $30,000 had been received. The sum now in hand is thought to be sufficient to cover the expenditures for ten or twelve days longer. Three temporary hospitals have been put into commission, in addition to the Butler County General Hospital, which has been taxed to its utmost since the beginning of the epidemic. It is possible that another temporary hospital may have to be opened. Miss Barton, the head of the International Red Cross Society, has arrived in Butler, and plans to aid in the work of relief. It is probable that a Red Cross hospital will be established in connection with a hospital supplies room and diet kitchen.

GENERAL.

Primary Ovarian Pregnancy Data Wanted.—Dr. Louis Frank, 229 W. Chestnut Street, Louisville, Ky., would appreciate communication from any one who has personal knowledge of a case of primary ovarian pregnancy. Data regarding the pathologic finding is especially wanted.

Colorado Medicine.—This is the title of the new journal owned and published by the Colorado State Medical Society, and which takes the place of the annual transactions. The number before us consists of thirty-two pages, all filled with excellent scientific matter, together with news items, etc., relating especially to Colorado. It contains no advertisements. The journal is certainly a credit to the society, as well as to those under whose charge it is published. The editor is Dr. Edward Jackson.

FOREIGN.

Morphin-Scopolamin Narcosis.—An original article by Korff in the *Münchener Med. Wochft.* No. 46, is reviewed on page 1568 of this number of THE JOURNAL. No 48 of the *Wochenschrift* has just been received as we go to press, and it states that the dosage of scopolamin was incorrectly given in the article. It should read .01 gm. scopolamin hydrobromate, instead of .001 gm., in the formula. The total amount given is thus .001 gm. scopolamin and .025 morphin. The drug is better known in this country as hyoscin hydrobromate.

Public Anti-Charlatan Meeting at Berlin.—The German Society for the Campaign against Venereal Diseases announced a public meeting to discuss the subject "Venereal Disease and Quacks." Professor Kutner delivered the opening address, from the standpoint of the physician, followed by an eminent judge, who discussed the medicolegal bearings of the question. He asserted that many of the present evils would vanish when the advertising of charlatans is restricted. At present they are favored by the law as they are allowed to advertise while physicians are not. The meeting drew a crowd, but mostly of charlatans and their adherents who did all they could to throw ridicule and discredit on the speakers, especially when one read quotations from the published writings of charlatans showing how grossly they contradict themselves. The assembly finally grew so tumultuous that the proceedings were summarily broken off and the meeting adjourned *sine die*.

The Approaching International Congress of Otology.—The subjects appointed for discussion are "Choice of a Simple and Practical Acoumetric Formula," "Suppurations of the Labyrinth," and "Technic of Operating and After-Care of Otogenic Brain Abscess." The addresses on the first subject will be by Politzer, Gradenigo and Delsaux; on the second by Brieger, von Stein and Dundas Grant, and on the third by Knapp, Schmiegelow and Botey. The date has been definitely settled as August 1 to 4, 1904, at Bordeaux, France. English, French, German and Italian are to be the official languages. The fee of $5 may be sent to Dr. Lannois, rue Emile-Zola 14, Lyons, the treasurer of the congress. The secretary general is Dr. Lermoyez, rue la Boétie 20 *bis*, Paris, to whom communications should be addressed, if possible before May 1, accompanied by a brief summary. The Lenval prize will be awarded during the congress for the work that has realized the greatest progress in the practical treatment of affections of the auditory apparatus or for the invention of some portable appliance, which has materially improved the hearing of the deaf. The committee in charge of the awarding of the prize consists of Politzer of Vienna, Benni of Warsaw, Gellé of Paris, Pritchard of London, Kircher of Würzburg, Grazzi of Florence, Moure of Bordeaux and D. B. St. John Roosa of New York. The prize is the interest on $600, accumulated since the congress before the last, and the competing articles are restricted to this period. The president of the congress is Professor E. J. Moure of Bordeaux, founder and editor of the well-known *Revue Hebdomadaire de Laryngologie d'Otologie et de Rhinologie*, now in its twenty-fourth year.

PARIS LETTER.

Marmorek's New Antituberculous Serum.

A good deal of curiosity had been excited by the announcement that Dr. Marmorek, late of the Pasteur Institute, was to read a communication at the Académie of Médecine on his new serum for tuberculosis. This was to take place November 10, but on account of the quantity of communications, it was put off till November 17. The *Temps* gives an excellent account of the proceedings at the Académie de Médecine, much better certainly than most of the medical papers. The space reserved for the public was filled, numerous photographers being present. Dr. Marmorek's communication has been reviewed in THE JOURNAL, December 5 and 12, pages 1421 and 1479. According to Dr. Marmorek, definite judgment can not as yet be pronounced on his serum. Experiments are being carried out with it in various parts of the world.

Comments on the Serum.

Dr. Marmorek's communication was not immediately discussed, as he is not a member of the Academy of Medicine. According to the *Temps* Professor Dieulafoy has employed the serum in his clinique at the Hotel Dieu, and with poor results, it would seem. Dr. Hallopeau has used it at the St. Louis Hospital against lupus, and has obtained no result. Dr. Lucas Championniere employed it in 5 cases of bony tuberculosis, and considered it did not act differently from other sera. Experments carried on in guinea-pigs were unsatisfactory. In one of the hospitals a case of Pott's disease and one of consumption died while being subjected to this treatment at the very same hour. The symptoms observed were those of cyanosis and asphyxia. The medical editor of the *Matin* has written an editorial on the serum of Marmorek in which he does not seem to be very partial to him, Koch's fiasco being brought up as a warning. It should be remembered that Marmorek's antistreptococcic serum was looked on with disfavor when first brought out, and it has never been accepted here in Paris by the majority of prominent medical men.

Dieulafoy's Views.

On December 1, Professor Dieulafoy gave the results in his service furnished by the use of Marmorek's serum. During August, September and October, 1902, 7 tuberculous patients were treated by this serum; 4 patients were suffering from ordinary pulmonary tuberculosis, 2 had laryngeal and pulmonary tuberculosis, and lastly 1 was affected with pleural tuberculosis followed by an effusion. Marmorek made the injections himself, determined the doses, and repeated the doses as often as he wished. The quantity of serum injected was about 5 to 10 c.c., and the injections were made each day, every other day, or at wider intervals. Dieulafoy examined carefully the patients, ausculted them frequently, had minute observations taken, and found the following results: 1. The serum did not seem to have any effect on the fever, and one patient, who had had no fever, showed a high temperature after the first injections. 2. The serum did not seem to have a beneficial effect on the sputum, which increased in quantity as much as two or three times in some cases. 3. The serum does not seem to have had a favorable action on the tuberculous lesions, and in some cases, pulmonary or pleural lesions appeared during the course of the treatment. 4. The serum does not seem to have had a favorable effect on the nutrition, as these patients continued to lose flesh and sometimes rapidly, notwithstanding overfeeding. Dieulafoy, on these reasons, asked Marmorek to discontinue his injections. Of the 7 patients treated in this manner 5 are already dead. Their clinical history is as follows: A case of fibrous tuberculosis without fever is still alive in Dieulafoy's service. A case of pleurisy recognized by cytodiagnosis and inoculation to be of pleuritic nature, has come back to the hospital after a year, and has a large pulmonary excavation. Case of laryngeal and pulmonary tuberculosis: Treatment began Aug. 6, 1902. Died Oct. 2, 1902. Second case similar to the preceding one. Died in November, 1902. Lastly, 3 cases of ordinary pulmonary tuberculosis, who died in August, January and April, 1903. Experiments were also carried out on animals, two series of guinea-pigs being inoculated with sputum. The first series was injected with the serum and died before the second series, which had had no treatment. Such is the result observed by Professor Dieulafoy.

Comments of Other Observers.

Monod, the surgeon, has tried Marmorek's serum in his service and remarked that there had been an amelioration in all his cases, and that he was willing to continue his experiments with this serum. Le Dentu, a genito-urinary surgeon, had tried it in one case, and the patient was injected 12 to 15 times. As there was no improvement, the treatment was stopped. Dr. Hallopeau also tried this treatment on seven patients affected with tuberculous lesions of the skin, and there was no amelioration, but new foci formed around old lesions.

Correspondence.

Tuberculosis Congresses.

CHICAGO, Dec. 12, 1903.

To the Editor:—Your editorial in the last number of THE JOURNAL on "Tuberculosis Congresses" is most timely, and it is to be hoped that it will prevent misunderstandings in the future. Those actively working in the local associations for the prevention of tuberculosis have so far not cared to define their position in regard to these so-called "American" congresses; their time has been more usefully employed in perfecting their organization and preventative methods, and no doubt in time this will bring about the formation of a national body for the purpose of standardizing and generalizing their measures. It is indeed unfortunate that any number of men can combine and call themselves "American Congress" and by virtue of that name alone, not only persuade the unsuspecting medical and lay public of its representative character, but even as in the case of the "Bell Congress" receive the sanction and assistance of the Government. The pathetic in this case is more striking than the humorous, because as you have justly pointed out, the impression abroad is that this planned congress is of a representative character and that preparations are made to send delegates to it. I have had several inquiries in regard to this, and only a few days ago I received a letter from Dr. Pannwitz, secretary general of the International Central Bureau for the Prevention of Tuberculosis (representing sixteen countries) inquiring about these congresses, and expressing the hope that America would be definitely represented in the international movement against tuberculosis after the congress to be held in St. Louis. Such misunderstandings, brought about by the announcements of these congresses, must have the effect of minimizing the importance of the movement, and it does not matter whether the promoters of the scheme have good or evil intentions, they are in no way qualified to represent American work and thought in the antituberculosis crusade.

The most important tuberculosis associations which are doing active work in this country are the following:

BOSTON: Association for the Relief and Control of Tuberculosis, 43 Hawkins Street, Harold K. Estabrook, secretary.

NEW YORK: Committee on the Prevention of Tuberculosis of the Charity Organization Society, 105 East 22d Street, Paul Kennady, secretary.

PHILADELPHIA: The Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis, Dr. Lawrence F. Flick, medical Director.

BALTIMORE: The Tuberculosis Commission of Maryland, 10 South Street, Dr. M. L. Price, medical officer.

CHICAGO: Committee for the Prevention of Tuberculosis of the Visiting Nurse Association, 79 Dearborn Street, Dr. Wm. A. Evans, secretary.

These associations have, through their officers and members, a truly representative character in their respective cities. They reach a very large number of consumptives and so can apply preventative measures, educational and other, in an efficient manner, wherever most needed. They are also working in close co-operation with health boards and charity organizations, thereby greatly increasing their importance. The "American Congresses" have nothing to do with these working bodies, they are satisfied with themselves, their announcements and letterheads, which as far as we can discover are their only weapons in the fight against tuberculosis.

It is to be hoped that your editorial will prevent some unsuspecting members of our profession from being persuaded to consent to serve as officers of these congresses, and I feel certain that your efforts will have the unanimous approval of all those actively interested in the movement.

ARNOLD C. KLEBS.

79 Dearborn Street.

Marriages.

CLIFTON L. GREEN, M.D., to Miss Bessie Hart, both of Utica, Miss., December 2.

ROBERT F. CAMPBELL, M.D., to Miss Gertrude C. Wallis, both of Chicago, December 10.

PAUL SORKNESS, M.D., to Miss Grace Marie Thacker, both of Fargo, N. D., December 2.

NOAH E. SUTTON, M.D., to BERTHA E. WIGGIN, M.D., both of Trenton, Mo., November 25.

WILFRED S. HALE, M.D., to Miss Helen Gould, both of Albany, N. Y., November 21.

JAMES W. ALLEN, M.D., to FRANCES D. EMERY, M.D., both of Dallas, Texas, November 30.

ALVIN CRAIG LEE, M.D., to Miss Hattie May Niman, both of Mansfield, Ohio, December 16.

LAWRENCE T. ROYSTER, M.D., Norfolk, Va., to Miss Ola Park, at Washington, D. C., December 9.

THOMAS D. ARMISTEAD, M.D., Roanoke, Va., to Miss Shelburne of Richmond, Va., December 6.

JOHN HENRY YOUNG, M.D., Cumberland, Wyo., to Miss Nancy May Boyer, at Carroll, Ohio, November 19.

R. G. CURTIS, M.D., Honokaa, Hawaii, to Miss Blair of New York, at Honolulu, Hawaii, November 16.

GEORGE WILLIAM PARKER, M.D., Chicago, to Miss Amy Josey of Calumet, Mich., at Chicago, December 1.

WILLIAM C. MCCAULEY, M.D., Versailles, Ky., to Miss Sara Smith Camp of Jackson, Mich., December 9.

BUDD CLARKE CORBUS, M.D., Chicago, to Miss Julia Gertrude Pitkin of Benton Harbor, Mich., December 15.

LESTER EFIRD, M.D., Leesville, S. C., to Miss Georgia Constance Rights of Winston-Salem, N. C., November 25.

JOHN FRANKLIN WOODWARD, M.D., Norfolk, Va., to Miss Martha Washington Philips of Tarborough, N. C., December 16.

JESSE RALPH HARRIS, M.D., U. S. Army, Fort Meyer, Washington, D. C., to Miss Belle Agnes Miller of Buffalo, December 2.

Deaths.

William Ingalls, M.D. Harvard University Medical School, Boston, 1836, surgeon of the Fifth and later of the Fifty-ninth Massachusetts Volunteer Infantry in the Civil War; for fifteen years surgeon at the Boston City Hospital; a member of the Massachusetts Medical Society, the Obstetrical Society of Boston, and other scientific bodies, and one of the best known of the older physicians of Boston, died in his apartments in Roxbury, December 1, after a short illness, aged 90.

John F. Meehan, M.D. Baltimore Medical College, 1894, who served in the Spanish-American War, and afterward in the hospital corps and as an acting assistant surgeon in the Army, died at his home in Urbana, Ohio, December 3, from skull-fracture due to a fall, November 26, aged 30.

Henry C. Utz, M.D. Louisville Medical College, 1891, a member of the American Medical Association, and one of the rising young practitioners of Hamilton County, Ind., died at his home in Atlanta, December 7, from pneumonia, after an illness of three weeks, aged 37.

Delano Gavin Brown, M.D. College of Physicians and Surgeons of Buffalo, N. Y., 1883, died at his home in Honeoye Falls, N. Y., November 30, after an illness of three months from Bright's disease, aged 50.

Horace M. Paine, M.D. University of the City of New York, 1849, of Albany N. Y., a member of the American Medical Association, died in Atlanta, Ga., December 5, from pneumonia, aged 76.

Calvin B. Phillips, M.D. Washington University School of Medicine, Baltimore, 1868, a member of the American Medical Association, died suddenly at his home in Cuero, Texas, December 6.

Virgil Kingsley, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1877, died at his home in Carthage, Ill., December 4, after an illness of one week from pneumonia, aged 51.

Eugene Field Hume, M.D. College of Physicians and Surgeons in the City of New York, 1901, of Lexington, Ky., died at Richmond, Ky., December 3, from pneumonia, aged 28.

Katherine M. Crawford, M.D. Hahnemann Medical College, Chicago, 1885, of York, Pa., died in the York Hospital, December 2, after a surgical operation, aged 47.

Charles M. Fuller, M.D. Boston University School of Medicine, 1878, died at his home in Medfield, Mass., December 4, after a short illness, from pneumonia.

R. F. Julian, M.D., of Bloomington, Tenn., was shot and instantly killed while returning from a professional call at Baxter, Tenn., December 5, aged 45.

M. E. Gonzalez, M.D. Cooper Medical College, San Francisco, 1883, died suddenly from apoplexy at his apartments in San Francisco, December 6, aged 55.

Jean Bertrand Duchien, M.D. Académie de Montpellier, France, 1885, died recently from pneumonia at his home in Baton Rouge, La.

Joseph R. Schooling, M.D. University of Louisville, 1875, died at his home in Marrowbone, Ky., from paralysis, December 3, aged 50.

Edward C. Lyman, M.D. University of Michigan, Ann Arbor, 1892, died at his home in Flint, Mich., December 4, aged 28.

Charles McMyers, M.D. University of Maryland, Baltimore, 1894, died suddenly at Baltimore, December 4, aged 60.

James M. Van Dyck, M.D., died at his home in Dorchester, Mass., December 3, from morphin, self-administered.

Phineas Cleveidon, M.D. Eclectic Medical Institute, Cincinnati, 1899, died recently at Albuquerque, N. M.

E. Lee Ensign, M.D. Albany Medical College, 1856, died at his home in Erieville, N. Y., December 3, aged 73.

John R. Freed, M.D. University of Louisville, 1882, died at his home in Carthage, Mo., December 8.

Miscellany.

Value of Calabar Bean in Atony of Morphin Addiction.—O. Emmerich has been for twelve years in charge of a sanitarium for nervous diseases and drug habits at Baden Baden, and his experience has demonstrated that in morphin addiction there are three stages. In the first, the intestine is quieted by the morphin, inducing the familiar obstipation. Then follows a stage of tolerance in which the intestines may functionate comparatively normally. The third stage of the drug addiction brings atony, diminished glandular activity, in fact the gland and muscle tissue partially disappear and ptosis is pronounced. This last stage is the distinct indication for extract of the calabar bean according to the remarkable experiences he relates from his practice. None of the derivatives or other preparations of the bean are reliable, and he has had mishaps with them. He does not aim to afford temporary relief but to tone up the intestines so that other measures will be able to take hold. He finds that this toning up is not restricted to the intestines alone, but all the suspending ligaments, the bladder, the heart and the vessel musculature share in the benefits from it. He remarks that the action of the bean can be seen in the expulsion of an enema. When a pint of water injected in an old morphinist, which formerly could be retained for ten to fifteen minutes without effort, is spontaneously expelled almost at once, the bean has accomplished its purpose and should be suspended. Then is the moment for mechanical and dietetic measures to take advantage of what has been gained in this way. The artificial toning up of the intestines is rendered permanent by appropriate physical measures. The patient is encouraged to take exercise, climb, and food given in abundance which will force the intestines to work, cooked fruits, etc. He has never derived any benefit from massage or abdominal bandages in such cases. He concludes his article in the *Allg. Med. Ct.Ztg.*, lxxii, p. 297, by urging others to try the extract of calabar bean in ptosis and atony from other causes than the drug habit.

State Boards of Registration.

COMING EXAMINATIONS.

Colorado State Board of Medical Examiners, 1723 Tremont St., Denver, Dec. 22-24. Secretary, Dr. S. D. Van Meter, Denver.

Utah State Board of Medical Examiners, Salt Lake City, Jan. 4, 1904. Secretary, Dr. R. W. Fisher, Salt Lake City.

State Medical Examining Board of Washington, Tacoma, Jan. 5-6, 1904. Secretary, Dr. P. B. Swearingen, Tacoma.

Board of Medical Examiners of Arizona, Phoenix, Jan. 4-5, 1904. Secretary, Dr. Wm. Duffield, Phoenix.

State Medical Examining Board of North Dakota, Grand Forks, Jan. 5, 1904. Secretary, Dr. H. M. Wheeler, Grand Forks.

Board of Medical Examiners of the State of Oregon, Portland, Jan. 5, 1904. Secretary, Dr. Byron E. Miller, Portland.

Colorado State Board of Medical Examiners, 1723 Tremont St., Denver, Jan. 5-6, 1904. Secretary, Dr. S. D. Van Meter, Denver.

Minnesota State Board of Medical Examiners, State Capitol Bldg., St. Paul, Jan. 5-7, 1904. Secretary, Dr. C. J. Ringnell, Minneapolis.

State Board of Health of Rhode Island, State House, Providence, Jan. 7, 1904. Secretary, Dr. G. T. Swarts, Providence.

Indiana State Board of Medical Registration and Examination, Indianapolis, Jan. 13, 1904. Secretary, Dr. W. T. Gott, Crawfordsville.

Board of Medical Examiners of South Dakota, Cataract Hotel, Sioux Falls, Jan. 13-15, 1904. Secretary, Dr. H. E. McNutt, Aberdeen.

Wisconsin Board of Medical Examiners, Milwaukee, Jan. 12, 1904. Secretary, Dr. F. R. Forsbeck, Milwaukee.

Vermont State Board of Medical Censors, Y. M. C. A. Bldg., Burlington, Jan. 13-14, 1904. Secretary, Dr. S. W. Hammond, Rutland.

Board of Medical Supervisors of the District of Columbia, Washington, Jan. 14, 1904. Secretary, Dr. Wm. C. Woodward, Washington.

Illinois State Board of Health, Great Northern Hotel, Chicago, Jan. 14-16, 1904. Secretary, Dr. J. A. Egan, Springfield.

Iowa State Board of Medical Examiners, Capitol Bldg., Des Moines, Jan. 26-27, 1904. Secretary, Dr. J. F. Kennedy, Des Moines.

Utah Report.—Dr. R. W. Fisher, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, November 6, at which 8 candidates were examined, all passing, on 10 subjects and 70 questions, the percentage required to pass being 75.

Colleges.	Year Grad.	Per Cent.
Starling Medical College, Columbus, Ohio	1885	77
Kansas City Medical College	1903	83
University of Vermont	1895	83
College of Physicians and Surgeons, San Francisco.	1902	85
University of California	1902	91
Rush Medical College, Chicago	1903	81
Rush Medical College, Chicago	1902	87
Marion Sims Medical College, St. Louis	1899	85

The Public Service.

Army Changes.

Memorandum of changes of stations and duties of medical officers for the week ending Dec. 12, 1903:

Hansell, Haywood S., asst.-surgeon, granted thirty days' leave of absence.

Rand, Irving W., asst.-surgeon, granted thirty days' extension to present leave of absence.

Bispham, Wm. N., asst.-surgeon, granted fifteen days' leave of absence.

Fisher, Henry C., asst.-surgeon, granted three months' leave of absence about Dec. 20, 1903.

Shockley, M. A. W., asst.-surgeon, relieved from duty at Fort Niobrara, Neb., on expiration of present leave, and ordered to Manila, P. I.

Byrne, Chas. B., asst.-surgeon general, Dec. 2, 1903, announced as chief surgeon, headquarters, Department of the Missouri, Omaha.

Steer, Samuel L., asst.-surgeon, granted twenty-one days' leave of absence.

Shillock, Paul, surgeon, granted four months' leave with permission to go beyond sea.

Polhemus, A. S., surgeon, leave extended thirty days.

Torney, Geo. H., deputy surgeon general; Brechemin, Louis, and Stephenson, Wm., surgeons, and Kennedy, Jas. M., asst.-surgeon, appointed members of a board of medical officers to meet at the U. S. General Hospital, Presidio of San Francisco, at the call of the president of the board, for examination of candidates for admission to the Medical Corps of the Army.

Banister, Jno. M., Carter, Wm. F., Raymond, H. I., Bradley, A. E., surgeons, and Kirkpatrick, Thos. J., asst.-surgeon, appointed members of a board of medical officers to meet in Manila, P. I., for the examination of candidates for admission to the Medical Corps of the Army.

Bourke, James, asst.-surgeon, relieved from duty at Fort Sheridan, Ill., and ordered to Chicago for temporary duty as attending surgeon and examiner of recruits in that city.

Purviance, Wm. E., asst.-surgeon, granted two months' leave of absence.

Ekwurzel, Geo. M., asst.-surgeon, assignment to station at Fort Banks, Mass., revoked.

Cox, Walter, asst.-surgeon, assignment to station at Fort Reno, Okla. Territory, revoked.

Farr, Charles W., asst.-surgeon, assignment to station at Fort Mason, Cal., revoked.

Girard, Joseph B., asst.-surgeon general, announced as chief surgeon, headquarters Department of Texas, San Antonio, Texas.

Banta, Wm. P., asst.-surgeon, granted thirty days' leave of absence.

Mason, Charles F., surgeon, relieved from temporary duty as chief surgeon, Department of Texas.

Kendall, Wm. P., surgeon, left U. S. Army General Hospital, Presidio of San Francisco with party of insane en route to Government Hospital for the Insane, Washington, D. C.

Slater, Ernest F., contract surgeon, on arrival at Fort Ethan Allen, Vt., with troops of the 15th Cavalry, is relieved from duty in the Division of the Philippines and directed to proceed to Fort Hancock, N. J., for duty.

Sparrenberger, Frederick H., contract surgeon, ordered to proceed from Denver to Fort Mott, N. J., for duty.

Waterhouse, M. Manley, contract surgeon, relieved from duty at Fort Mott, N. J., on the arrival thereat of Contract Surgeon Sparrenberger, and ordered to the Philippine Islands for duty.

Artand, Frank E., contract surgeon, ordered from Lake Providence, La., to the Philippine Islands for duty.

Corriman, Leighton R., contract surgeon, ordered from Lowell, Mass., to Fort Sheridan, Ill., to accompany troops of the 2d Cavalry thence to Philippine service.

Hughes, Leonard S., contract surgeon, granted two months' leave from the Division of the Philippines, with permission to visit the United States and to apply for an extension of one month.

Ramsey, William H., contract surgeon, assigned December 9 to duty as attending surgeon and examiner of recruits at Omaha.

Pinquard, Joseph, contract surgeon, ordered from Vinita, Ind. Ter., to the Philippine Islands for duty.

Prentice, Arthur D., contract surgeon, ordered from San Francisco to the Philippine Islands for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Dec. 12, 1903:

Wheeler, W. M., surgeon, ordered to the Navy Yard, Puget Sound, Washington, and also on board the *Nipsic*.

Thompson, J. C., P. A. surgeon, detached from the Navy Yard, Puget Sound, Wash., and ordered to the *Albatross*.

Butler, C. S., asst.-surgeon, detached from the *Albatross* and ordered home to wait orders.

Peck, C. S., asst.-surgeon, detached from the *Iris* and ordered home and to wait orders.

Percy, H. T., surgeon, detached from the *Indiana* and ordered to the *Iowa*.

Jenness, B. F., asst.-surgeon, detached from the *Indiana* and ordered to the *Iowa*.

Brownell, C. D. W., surgeon, ordered to the *Amphitrite*, with additional duty at the naval station, Guantaname, Cuba.

Pickrell, G., surgeon, ordered to additional duty in charge of the naval hospital, San Juan, P. R.

McDonnell, W. N., A. A. surgeon, detached from the Naval Academy and ordered to the *Glacier*.

Marine-Hospital Service.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the 14 days ended Dec. 10, 1903:

Sawtelle, H. W., surgeon, to inspect unserviceable property at Stapleton, N. Y.

Guiteras, G. M., surgeon, on completion of duties at Laredo, Texas, to rejoin station at Cairo, Ill.

Gardner, C. H., P. A. surgeon, relieved from duty at the Immigration Depot, New York, and directed to proceed to Key West, Fla., and assume command of the service at that port.

Oakley, J. H., P. A. surgeon, to proceed to Seattle, Wash., and assume temporary charge of service at that port, relieving A. A. Surgeon C. B. Ford.

Von Ezdorf, R. H., P. A. surgeon, detailed as inspector of certain points on Mexican National and Mexican Gulf railroads.

Lumsden, L. L., P. A. surgeon, Bureau letter granting leave of absence for ten days, amended so that said leave shall be for six days from November 15.

Fricks, L. D., P. A. surgeon, granted extension of leave of absence for one month from December 1.

Kerr, J. W., asst.-surgeon, to proceed to Washington, D. C., and report to chairman of examining board to determine his fitness for promotion to the grade of P. A. surgeon.

Richardson, T. F., asst.-surgeon, relieved from temporary duty in Texas and directed to rejoin station at New Orleans.

Goldberger, Jos., asst.-surgeon, relieved from temporary duty at Laredo, Texas, and directed to report at the Bureau, Washington, D. C.

Amesse, J. W., asst.-surgeon, to proceed to Seattle, Wash., and assume command of the service at that port, relieving P. A. Surgeon J. H. Oakley.

Glover, M. W., asst.-surgeon, relieved from duty at Baltimore, and directed to proceed to Victoria, B. C., for immigration duty.

Burkhalter, J. T., asst.-surgeon, granted leave of absence for one month from December 3.

Ebersole, R. E., asst.-surgeon, relieved from duty in Texas, and directed to rejoin his station at Gulf quarantine.

Foster, A. D., asst.-surgeon, relieved from duty at Charleston, S. C., and directed to proceed to Baltimore for immigration duty.

Brown, F. L., pharmacist, directed to rejoin his station at Pittsburg, Pa.

Walerius, M., pharmacist, relieved from temporary duty at Laredo, Texas, and directed to rejoin station at St. Louis.

Brooks, S. D., surgeon, to proceed to Brunswick, Ga., and assume temporary command of station.

McMullen, John, P. A. surgeon, relieved from duty at Hongkong, China, and directed to proceed to San Francisco and report arrival by wire.

Parker, H. B., P. A. surgeon, to proceed to New York and report to Surgeon G. W. Stoner, Immigration Depot, for duty.

White, M. J., P. A. surgeon, relieved from duty at Honolulu, T. H,. and directed to proceed to Hongkong, China, for duty.

Richardson, T. F., asst.-surgeon, granted leave of absence for seven days from Dec. 6, 1903, under paragraph 191 of the regulations.

Amesse, J. W., asst.-surgeon, to proceed to Seattle, Wash., and assume command of the service at that port. Granted leave of absence for one day.

Berry, T. D., asst.-surgeon, detailed as inspector of unserviceable property at Cleveland, Ohio. To proceed to Cairo, Ill., and assume temporary command of service at that port during absence of Surgeon G. M. Guiteras.

Ebersole, R. E., asst.-surgeon, relieved from duty at Gulf Quarantine Station, and directed to proceed to Tampa Bay Quarantine Station and assume command.

Ebert, H. G., asst.-surgeon, granted leave of absence for four days from Nov. 28, 1903, under paragraph 191 of the regulations.

Smith, E. G., asst.-surgeon, to proceed to Santa Clara, N. Y., for special temporary duty to examine aliens.

Bready, J. E., A. A. surgeon, granted leave of absence for two days from December 15.

Gregory, G. A., A. A. surgeon, granted leave of absence for seven days from December 5.

Ryder, L. W., pharmacist, granted leave of absence for 15 days from December 10.

CASUALTY.

Burford, Hugh, A. A. surgeon, died at Brunswick, Ga., Dec. 7, 1903.

Murray, S. D., surgeon, died at Laredo, Texas, Nov. 22, 1903.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Dec. 11, 1903:

SMALLPOX—UNITED STATES.

California: San Francisco, Nov. 22-29, 1 case.
Maine: Madawaska Tp., Nov. 1-30, 65 cases.
Michigan: Detroit, Oct. 31-Nov. 5, 3 cases; 37 localities, Nov. 21-28, present.
Mississippi: Natchez, Nov. 29-Dec. 6, 11 cases.
Missouri: St. Louis, Nov. 28-Dec. 5, 2 cases.
New Hampshire: Manchester, Nov. 29-Dec. 5, 2 cases.
New Jersey: Camden, Nov. 29-Dec. 5, 3 cases, 1 death.
New York: New York, Nov. 29-Dec. 5, 1 case, 1 death.
Ohio: Cincinnati, Nov. 27-Dec. 4, 5 cases; Nov. 28-Dec. 5, Dayton, 1 case; Youngstown, 19 cases.
Pennsylvania: Nov. 28-Dec. 5, Erie, 13 cases; Johnstown, 7 cases; McKeesport, 1 case; Nov. 29-Dec. 5, Philadelphia, 99 cases, 15 deaths; Pittsburg, 28 cases, 6 deaths, 1 imported.
Tennessee: Memphis, Nov. 29-Dec. 5, 5 cases.
Utah: Salt Lake City, Nov. 21-28, 2 cases.
Wisconsin: Milwaukee, Nov. 14-28, 3 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila, Oct. 10-24, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, Nov. 7-21, 16 cases.
Belgium: Brussels, Nov. 7-14, 2 deaths.
Brazil: Rio de Janeiro, Oct. 25-Nov. 8, 89 cases, 59 deaths.
Chile: Antofogasta, Oct. 1-31, 13 deaths.
Colombia: Barranquilla, Nov. 15-22, 1 death.
France: Paris, Nov. 7-21, 10 cases, 1 death.
Great Britain: Glasgow, Nov. 13-27, 38 cases, 5 deaths; Newcastle-on-Tyne, Oct. 31-Nov. 21, 8 cases; Nottingham, Nov. 14-21, 1 death.
Italy: Catania, Nov. 12-19, 5 deaths.
Malta: Oct. 31-Nov. 7, 1 case.
Russia: Nov. 7-14, Moscow, 5 cases, 3 deaths; St. Petersburg, 54 cases; Odessa, Nov. 7-21, 4 cases, 2 deaths.
Turkey: Constantinople, Nov. 8-15, 1 case; Smyrna, Nov. 1-15, 29 deaths.
Venezuela, Oct. 26, Guarico District, epidemic; Pascua District, epidemic; Tucupido District, epidemic.

YELLOW FEVER—UNITED STATES.

Texas: Laredo, Dec. 1-7, 2 cases.

YELLOW FEVER—FOREIGN.

Mexico: Nov. 15-21, Ciudad Victoria, 5 cases, 4 deaths; Linares, 29 cases, 4 deaths; Marida, 5 cases, 2 deaths; Nuevo Laredo, 1 death; Tampico, 2 cases, 2 deaths; Tehuantepec, 1 case.
Venezuela: Oct. 16, Barquisemeto, present; Tucuyo, present.

CHOLERA—INSULAR.

Philippine Islands: Oct. 10-24, Manila, 60 cases, 57 deaths; Provinces, 1,700 cases, 1,384 deaths.

CHOLERA—FOREIGN.

India: Calcutta, Oct. 24-31, 19 deaths.
Straits Settlements: Singapore, Oct. 17-24, 12 deaths.
Turkey in Asia: to Nov. 9, Aintab, 9 cases, 4 deaths; Aleppo, 16 cases, 15 deaths; Anah, 51 cases, 93 deaths; Antioch, 7 cases, 7 deaths; Birodjik, 4 cases, 4 deaths; Damascus, 2 cases, 2 deaths; Dolonki, 11 cases, 11 deaths; Haiffa, 7 cases, 5 deaths; Urfa, 4 cases, 2 deaths.

PLAGUE—INSULAR.

Philippine Islands: Manila, Oct. 10-24, 3 cases, 2 deaths.

PLAGUE—FOREIGN.

Australia: Perth, Oct. 13, 1 case.
Brazil: Para, Nov. 1-8, 2 cases; Rio de Janeiro, Sept. 28-Oct. 18, 124 cases, 53 deaths.
Chile: Iquique, Sept. 1-30, 12 cases, 7 deaths.
Egypt: Alexandria, Oct. 31-Dec. 6, 2 cases, 3 deaths.
India: Calcutta, Oct. 24-31, 19 deaths.
Japan: Yokohama, Oct. 17-24, 3 cases; 4 deaths.
Mauritius: Oct. 29-Nov. 5, 72 cases, 36 deaths.

Medical Organization.

California.

BUTTE COUNTY MEDICAL SOCIETY.—Pursuant to call, physicians of the county met at Chico, November 28, and organized a society to be in affiliation with the state and national organizations. Dr. Oscar Stansbury, Chico, was elected president; Dr. Eli A. Kusel, Oroville, vice-president, and Dr. D. H. Moulton, Chico, secretary and treasurer. A committee was appointed to frame a constitution and by-laws, and to report on same at the next meeting, December 19.

Illinois.

PUTNAM COUNTY MEDICAL SOCIETY.—This society was organized at McNabb, November 28, with the aid of Dr. William O. Ensign, Rutland, councilor for the Second District.

Indiana.

POSEY COUNTY MEDICAL ASSOCIATION.—This society held its annual meeting at Mount Vernon, November 24, made plans for reorganization, and applied for a new charter. Dr. Jerome M. Gloze, New Harmony, was elected president, and Dr. F. Leslie Stallings, Caborn, secretary.

BOONE COUNTY MEDICAL SOCIETY.—The Boone County Medical Society held a business session and banquet at Crawfordsville, December 3. Dr. Paul J. Barcus, Crawfordsville, councilor for the Ninth District, explained the standard plan of reorganization, which was adopted unanimously.

BLACKFORD COUNTY MEDICAL SOCIETY.—This society met at Hartford City, November 26, and reorganized on the standard plan under the direction of Dr. Robert Hessler, councilor for the Eleventh District. Dr. Manford M. Clapper was re-elected president, and Dr. Eneidas K. Scott, secretary, both of Hartford City.

Iowa.

BOONE COUNTY MEDICAL SOCIETY.—The first annual meeting of this society was held at Boone, December 2. The following officers were elected: Dr. William L. Pollock, president; Dr. G. Henry Nordstrom, secretary; Dr. Edward M. Myers, treasurer, and censors, Drs. George D. Rowe, James C. Walker and George H. Stanger, all of Boone.

CLARKE COUNTY MEDICAL SOCIETY.—This society was organized, November 5, on the standard plan, with 13 members. The following officers were elected: President, Dr. J. Frank Aldrich, Murray; vice-president, Dr. Frederick S. Bowen, Woodbury; secretary, Dr. John L. Millard, Osceola; treasurer, Dr. William O. Parrish, Osceola, and delegate, Dr. J. Frank Aldrich, Murray. Dr. Frank E. Sampson, Creston, councilor for the Eighth District, was present and explained the plan of reorganization.

Maryland.

WICOMICO COUNTY MEDICAL SOCIETY.—Physicians of the county met at Salsbury, December 5, and organized a society on the standard plan with 15 charter members and the following officers: Dr. Francis M. Siemons, Salisbury, president; Dr. Eugene W. Humphreys, Salisbury, secretary and treasurer, and Dr. Harry C. Tull, Tyaskin, vice-president, and delegate to the state convention.

Minnesota.

DAKOTA COUNTY MEDICAL SOCIETY.—This society was organized at Hastings, December 3, on the standard plan, with the following officers: President, Dr. Alfred M. Adsit, Hastings; vice-president, Dr. Lewellyn D. Peck, Hastings; secretary, Dr. Warren M. Dodge, Farmington; treasurer, Dr. Julius C. Fitch, Hastings; censors, Drs. Charles O. Van Cappellen and Henry G. C. Van Beeck, Hastings, and one to be chosen, and state delegate, Dr. Alfred M. Adsit, Hastings. Dr. William S. Fullerton, St. Paul, state organizer, aided in the reorganization.

Oregon.

CENTRAL WILLAMETTE MEDICAL ASSOCIATION.—The physicians of Linn, Benton and Lincoln counties met at Albany, December 3, and effected a permanent organization on the standard plan, and elected the following officers: Dr. James P. Wallace, Albany, president; Dr. Henry S. Pernot, Corvallis, vice-president; Dr. August Stark, Albany, treasurer; Dr. William A. Trimble, Albany, secretary, and Drs. Thomas C. Mackey, Harrisburg, George R. Farra, Corvallis, and Albert G. Prill, Icio, censors.

Society Proceedings.

COMING MEETING.

Western Surgical and Gynecological Association, Denver, Dec 28-29.

ACADEMY OF MEDICINE OF CLEVELAND.

Sixth Regular Meeting of the Section on Experimental Medicine, held Nov. 13, 1903.

Dr. John G. Spenzer, Chairman of the Section, in the Chair

Experimental Study of Caisson Disease.

DR. J. J. R. MACLEOD read a paper entitled "Caisson Disease and Diver's Palsy, an Experimental Study," based on experiments performed during the last year at the London City Hospital Laboratories in England, in collaboration with Leonard Hill, F.R.S., on grants from the Royal Society.

Dr. Macleod stated that animals subjected to several atmospheres pressure of air may die, either when under the pressure or when they are decompressed. The second is the commoner cause of death. Experiments showed that air embolism is the invariable cause of death from decompression. The symptoms preceding death are dyspnea, cyanosis, and

violent convulsions. Animals with these symptoms were saved by reapplying the air pressure and decompressing more slowly.

In the case of dogs weighing about ten kilos a little over an hour was found necessary for the tissue fluids to become saturated with gas, and about the same time had to be used in decompression to admit of the liberation of this gas without the formation of bubbles (air emboli). These facts were confirmed by analyses of the blood gases, O_2, CO_2, and N, in dogs placed under various air and oxygen pressures. With all possible care to prevent decompression palsy, it was nevertheless found that the animal might die while under pressure. Two factors are found to depress the vitality of animals under pressure: 1. Oxygen poisoning. 2. Excessive loss of body heat. That free oxygen is a poison was shown by numerous experiments. Even at atmospheric pressure, the animals breathing it show a distinct fall in the amount of carbon dioxid and water excreted by the lungs and a fall of rectal temperature. At several atmospheres pressure the toxic action becomes very marked. The symptoms are pneumonia and convulsions. Thus a mouse placed in one and a half atmospheres of pure O_2 died of pneumonia in sixty hours, the entire lung being hepatized. At six atmospheres pressure death occurred in two hours, being preceded by violent epileptiform convulsions, and the lungs at autopsy were found to be studded with patches of pneumonia. Below three and a half atmospheres no convulsions were noticed, and at pressures above six atmospheres they were replaced by a comatose state, soon followed by death. These experiments were conducted on a number of animals, and it was found that the larger the animal the less prone it was to the toxic action of oxygen.

That oxygen poisoning is a factor to be considered in compressed air was shown by the fact that the carbon dioxid excretion is depressed and that pneumonia frequently occurs in animals subjected to it. A cat in eight atmospheres pressure of air died in twenty-four hours, its lungs being pneumonic. No convulsions, however, were observed, and it was pointed out that pneumonia could only seldom occur in divers as a result of air pressure, as sufficiently high pressure was not employed in ordinary work, and when employed, as in deep sea diving, the shifts were sufficiently short to avoid danger. The second cause of death, excessive loss of body heat, was shown to depend on the increased heat conductivity of compressed air *per se*, and on the fact that it is saturated with moisture. The enormous influence of this factor, i. e., the cooling effect of wet air, was demonstrated as well by another series of experiments on mice. If these be placed in an atmosphere of water-saturated air, the body temperature soon falls to that of the chamber, the carbon dioxid excretion showing a corresponding fall. A detailed account of experiments is given in the current volume of the *Journal of Hygiene* (Cambridge, England).

The Clinical Side of Caisson Disease.

The next paper was read by DR. CHAS. ALDRICH on "Caisson Disease, from the Clinical Standpoint." After a summary of the history of the disease, Dr. Aldrich cited a number of cases, discussed the symptomatology, and commented on the value of the various precautions taken in caisson work to prevent injury to the workmen.

DISCUSSION.

DR. FRANK ROTH, who had spend eight months on the Cleveland crib as physician, and had done special work on the clinical side of caisson disease, stated that of hundreds of men, both experienced and inexperienced, not one showed any symptoms while in the compressed air, all these being delayed until the change to the normal pressure. The temperature varied in the tunnel according to the temperature of the contained air, but within narrow limits. On locking out there was a slight fall, especially noted in the new men, never to a point below 97. The pulse was usually slowed on entrance into the compressed air, but when work began it reached normal or above. On exit, however, there was in many of the men a very marked change. The pulse of these men, who were for the most part new to the work, became rapid, soft and almost imperceptible, the old hands in the majority of cases showing no marked change beyond an increase in the frequency. Those in whom these changes were most apparent were the ones to suffer most from the "bends."

The respirations increased in rate and depth, and most of the experienced hands had a greater or less degree of chronic emphysema. On locking out there was a sense of faintness and dizziness, the respirations becoming hurried, making the men fairly gasp for breath. This only occurred when the locking-out process was rapid. Dr. Roth stated that there was a great variety in the pains and other symptoms experienced, some of them very evanescent, the others of longer duration. The typical pains were at first fleeting, later localized, usually in the epiphysis of the long bones, with a boring and throbbing character, synchronous with the pulse, which becomes hard and rapid. There is at this point a rise of one or two degrees of temperature.

The more evanescent symptoms, disappearing in the course of a few minutes or half an hour, are also varied. Vertigo, fainting, headache, persistent vomiting, and even complete blindness are not uncommon. Some cases showed deficiencies in the surface circulation, at times associated with loss of reflexes, in others there was a temporary hemiplegia, paraplegia or monoplegia. This paraplegia sometimes came on later as the pains faded away. Severe pains in the epigastrium were noted, and in fat men in the larger muscles, of comparatively brief duration in both cases. Ten cases of a measly hyperemic rash, of half an hour duration, were noted.

Of greatest interest, perhaps, were three cases in which interstitial emphysema was noted. One of these was under the fascia lata, one in the gluteal region, and one in the calf of the leg. In another case gas emboli were seen in one of the veins of the wrist. These bubbles were four in number and were brought together by pressure, remaining visible for twenty minutes.

In some cases hyperesthesia was present for some time after the subsidence of other symptoms. One man fell in a typical epileptic fit after locking out, and denied any personal or family history of that disease.

The form known as the "chokes" appeared in groups of cases and appeared to be more frequent in the mason's shift, when the air was filled with dry cement. Attacks of this were often precipitated by smoking. Emetics gave prompt relief, and it was Dr. Roth's opinion that the attacks were due to a spasm of the glottis.

In the four deaths which occurred all were of the cerebral variety. In the 133 cases observed 68 per cent. had the pains alone, the other 32 per cent. being fairly divided among the other varieties.

The mules were at first locked out with the men, but it was found that this resulted in a mortality of at least one a day, and the experiment was tried of keeping them constantly at the high pressure. This was very successful, nine mules being kept under pressure for nine weeks, and then gradually locked out, the process taking 48 hours. None of these showed any inconvenience, eating twice as much and seeming much more lively than when in the open air. It was noted, however, that in spite of the amount eaten they grew steadily thinner. On the other hand, a horse which had been kept under pressure for almost a year and was then locked out in a very few minutes died at once. Animals frequently urinated and defecated during the process of locking in.

DR. W. T. HOWARD, JR., stated that in the autopsies which he had performed on cases of "bends," there was gaseous emphysema of varying degree, with bubbles in the brain and cord. He also stated that he had found definite hemorrhages on section of these tissues.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, held Dec. 3, 1903.

The President, Dr. Andrew H. Smith, in the Chair.

The Cleaning of a Great City and the Handling of Its Waste.

DR. JOHN M. WOODBURY, commissioner of street cleaning, gave the members of the New York Academy of Medicine an interesting talk on this subject, illustrating it with many lantern slides. He said that while large sections of the

boroughs of Brooklyn and the Bronx were swept by means of mechanical sweepers, these machines could not be used in streets having heavy traffic. In the crowded streets the work could only be done by individuals of the street-cleaning brigade. The French had learned long ago that the only effective way to remove the gum and dirt from asphalt streets was by washing with hose, and in certain sections of this city that method was employed when the temperature of the air was above 45 F. The work could be more rapidly and effectively done by using wagons provided with a tank of compressed air and a portable plant for compressing the air. It is difficult, however, to prevent the scattering of dust.

The old method of dumping the city refuse out in the sea was abandoned last March, and consequently the nearby seaside resorts are no longer made unpleasant and unsanitary by the floating in on the shore of all sorts of refuse. The old method cost $300 per week; at the present time, the city rents the privilege of picking over the rubbish as it passes along the belt conveyor, for the sum of $250 per week, with $50 for labor. Moreover, the rubbish which is unsalable is burned under the boilers and produces 250 horse power per hour. It was calculated that by these improvements there had been realized a gain of 400 per cent. on the $20,000 invested in this experimental plant. The garbage is kept separate from the rubbish and ashes and is disposed of by contract to the reduction works on Barren Island. Here it is exposed in digesters to a temperature of 300 F. and to a steam pressure of over 80 pounds, after which it is subjected to hydraulic pressure. The dried sweepings of the streets prove to be a very valuable fertilizing material, for which a ready sale is found. As the ashes are kept free from garbage and rubbish they make good material for filling in land. In this way, he had reclaimed from the borders of Riker's Island no less than 63 acres of land.

Therapeutics.

[Our readers are invited to send favorite prescriptions—such as have been tried and found useful—for publication in these columns. In each case the name of the sender must accompany the prescription, but the name will be published or omitted, as the sender may prefer.]

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Pneumonia.

The following combination is recommended by *Med. Rev. of Reviews* in the treatment of pneumonia in the early stage, occurring in children:

℞.	Potassii citratis	ʒiss	6
	Spts. etheris nitrosi	ʒvi	24
	Liq. ammon. acetatis	ʒi	30
	Syr. tolutani		
	Aquæ, āā, q. s. ad	ʒiv	120

M. Sig.: One dessertspoonful every three hours to a child of three years.

During the stage of expectoration the following combination is recommended for a child of the same age:

℞.	Ammon. carb.	gr. xlviii	3	20
	Ammon. iodidi	gr. xxiv	1	65
	Syr. tolutani			
	Syr. acaciæ, āā, q. s. ad	ʒiii	90	

M. Sig.: One teaspoonful every two or three hours.

Inhalations of Formalin.

Spengler, in *Boston Med. and Surg. Jour.*, recommends formalin inhalations in pulmonary tuberculosis and fetid bronchitis prepared after the following formula:

℞.	Formalin	m. lxxv	5
	Alcoholis (absolute)	ʒv	20
	Spts. etheris	ʒiiss	75

M. Sig.: Place ten drops in a tumbler and take ten or twelve deep inspirations, the mouth being removed from the glass to exhale. The first inhalations should be superficial and the latter ones deep. Inhalations are made every other day at bedtime, and stopped after two weeks, to be resumed in a few days and continued as before.

Hemorrhages in Typhoid Fever.

G. A. Sheldon, in *Med. Standard*, recommends the following combinations to control the hemorrhages in typhoid fever:

℞.	Ext. ergotæ flu.	m. x	65
	Morph. sulph.	gr. 1/4	015
	Atropinæ sulph.	gr. 1/150	0004

M Sig.: To be used at one dose hypodermically.

At the same time he administers 15 minims of a solution of adrenalin chlorid (1-1,000), and repeats it in twelve-drop doses every four hours.

As an intestinal antiseptic he recommends sodium sulphocarbolate. After the second week the following combination is given as an antiseptic and to allay as much as possible the tympanitis:

℞.	Olei terebinthinæ	ʒii	8	
	Olei gaultheriæ	gr. xii		75
	Pulv. acaciæ	ʒvi	24	
	Syr. simplicis	ʒiss	45	
	Aquæ	ʒvi	180	

Misce and filter. Sig.: One dessertspoonful in a little water every four hours.

To remove the sordes from the teeth and to cleanse the mouth the following is used:

℞.	Tinct. myrrhæ	ʒiss	6
	Glycerini	ʒiii	90
	Succi limonis	ʒi	4
	Aquæ q. s. ad	ʒvi	180

M. Sig.: To be used as a mouth wash.

Treatment of Acute Gonorrhea.

In an article in *Chicago Med. Recorder*, F. Kriesel speaks against the irrigation method in the treatment of acute gonorrhea, but in its stead recommends the use of an alkali to render the urine alkaline as an aid in removing the discharge and the attendant toxins. He condemns the use of too strong antiseptic solutions because of the dangers of rendering harm to the mucous membrane. He prefers as antiseptics and astringents, silver nitrate, protargol and ichthargin, used in dilute solutions at short intervals, retained for a few minutes and gradually increased in strength; used at longer intervals and retained for a longer period—for five, ten or fifteen minutes—after the inflammatory symptoms have subsided. During the first few days of the attack the injections should be used during the night also, so as not to lose the good obtained during the day. As much should be injected each time as the urethra will hold. He emphasizes the fact that a gonorrheal discharge will not dry up by using a silver salt as long as the gonococcus is present and not even then, as the silver salt always produces more or less reactive secretion in proportion to its concentration. Therefore, he recommends the use of the microscope to indicate when to give a slight astringent and to discard the gonocide. In general the following outline of treatment may be pursued, according to the author:

During the first two days and nights, injections with protargol ¼ to 1 per cent., or ichthargin one grain to six ounces every two hours, to be retained two minutes. During the next three days protargol, the same solution, every three hours, retained three minutes. The following four days protargol ½ per cent., or ichthargin two grains to six ounces, every four hours, to be retained five minutes. On the tenth day no injection in the morning. The silver salt may then ordinarily be reduced to one injection daily and retained for ten minutes, and as a substitute the following astringent and mild antiseptic may be prescribed:

℞.	Zinci sulphocarb.	gr. v	30
	Resorcin	gr. xxx	2
	Aq. destil	ʒvi	180

M. Sig.: Inject three times a day and retain for one or two minutes.

Reserve the silver solution for the time the patient is ready for bed. If at this time no gonococci are present the frequency and strength of the injection may be reduced, giving

only two injections daily and after a short time discontinued. If the secretion reappears with gonococci present return to the treatment of the third week, and if necessary increase the strength of protargol to a 2 per cent. solution or ichthargin ½ of 1 per cent. Stronger solutions of these preparations should never be used, but if they prove ineffective, change off to silver nitrate irrigations of the anterior urethra, which should be done in the following way: Fill a sterile hand syringe with five ounces of a 1-1,000 silver nitrate solution, insert a sterile soft rubber catheter, No. 12 English, well lubricated with sterile glycerin into the anterior urethra and inject through this catheter. Repeat this treatment every other day for a few weeks and give the patient an astringent to use at home.

The following combinations are recommended by *Merck's Archives* in the treatment of gonorrhea:

R.	Methylene blue	gr. xx	1 | 30
	Copaibæ	℥ii	8 |
	Olei resinæ cubebæ	℥ii	8 |
	Pancreatin	℥i	4 |

M. Ft. cap. No. xxiv. Sig.: Two before each meal; or:

R.	Largin	℥ii	8 |
	Aquæ destil	℥vii	210 |

Misce, by using boiling water. Sig.: To be used as an injection several times a day; or:

R.	Largin	gr. xv	1 |
	Glycerini	℥ii	8 |
	Aq. destil	℥vi	180 |

M. Sig.: Inject three times daily for first few weeks, then once daily; or:

R.	Ichthargin	gr. i-iv	|06-.25
	Glycerini	℥iv	15 |
	Aq. destil. q. s. ad	℥viii	240 |

M. Sig.: Inject four to six times daily.

In cases of gleet and chronic gonorrhea the following:

R.	Bismuthi subnit.		|
	Mucil. acaciæ, āā	℥iv	15 |
	Aquæ	℥iii	90 |

M. Sig.: Shake well and inject morning and evening; or:

R.	Methylene blue		|
	Pulv. myristicæ, āā	gr. xl	2 | 65
	Dionin	gr. x	| 65

M. Ft. capsulæ No. xx. Sig.: One capsule three times a day.

Chloroform as a Teniafuge.

In the same periodical, Leger recommends the following, containing chloroform, as an efficacious remedy in the removal of tapeworm:

R.	Spts. chloroformi	℥i	4 |
	Syrupis	℥i	30 |
	Aquæ	℥iv	120 |

M. Sig.: Two tablespoonfuls to be taken every hour until the entire amount is taken. Before the last dose, a purgative dose of castor oil or tincture of jalap is prescribed.

S. P. Gerhard, in *Med. Record*, recommends, in the removal of tapeworm, a combination of male fern and pelletierine as the most suitable remedy. The patient is instructed to take a good cathartic such as castor oil or salts the day previous to taking the teniafuge. The following morning, as early as possible, a dose of pelletierine tannate, grains 20 (1.30), is taken in two capsules at one dose. When this has operated freely, in about two hours, the following treatment is begun:

R.	Oleires. aspidii		|
	Spts. etheris, āā	℥ii	8 |
	Hydrarg. chloridi mitis	gr. xii	| 75

M. Ft. cap. No. xvi. Sig.: Two every ten minutes. No food should be taken during this treatment and the worm will be passed in the course of two or three hours.

Toxic Symptoms of Aspirin.

Although aspirin is now very extensively prescribed, the fact should not be overlooked that it may produce toxic symptoms. Dr. Franke, in *Ther. Monat.*, states that after he had taken 15 grains of aspirin to relieve pains in the calves of his legs, within fifteen minutes he noticed marked swelling of the upper lip, which quickly spread over the entire face, followed by difficulty in deglutition, frequent respiration and a pulse rate of 160. These symptoms gradually subsided after twenty minutes, and was succeeded by the appearance of an urticarial rash over the entire body. By the next morning the symptoms had all subsided except the swelling of the lips and eyes. He states that the poisoning was produced by some chemical change in the stomach, phenol being set free and absorbed.

Tuberculous Adenitis.

The treatment of tuberculous adenitis varies with the degree of involvement of the ganglion, according to Broca, in *Med. Press and Cir.* When the ganglion commences to hypertrophy from the infection the treatment should be directed toward the general condition of the patient by the use of iodin, arsenic, iron, phosphate of calcium, together with proper elimination and pure seaside air. A certain number of local remedies are of value, such as cutaneous revulsion, applications of tincture of iodin and interstitial injections of iodin, silver nitrate, zinc chlorid, Fowler's soluton, iodoform and ether and camphorated naphthol.

When suppuration is present curettage should be carried out, and if necessary extirpation of the degenerated glands when fistulæ have formed.

Medicolegal.

Facts Must Be Given with Opinions on Mental Capacity.—The rule that witnesses required to testify to the mental capacity of a person whose sanity is questioned must first state the facts within their observation, on which they rest their conclusions, the Supreme Court of Minnesota holds, in a case of Scott vs. Hay, applies to family physicians who have treated a patient generally for other complaints than his alleged infirmity. It says that the weight of reliable authority sustains this ruling, for, where a personal examination has been made even by a physician or expert, he will be required before giving his conclusion, to describe the symptoms which he observed, to aid the jury in forming a conclusion. Neither medical experts nor other witnesses can be allowed to give an opinion of the mental capacity of a person without first detailing the circumstances and facts on which such opinion is based, and when the opinion of an expert is not based on a hypothetical case, nor on the testimony of other witnesses, but on facts, symptoms and circumstances that have come under his observation as attending physician of the patient or otherwise, such facts, symptoms, or circumstances must be fully stated by the testifying witness, so that the jury can determine whether the facts, as well as the opinion itself, are correct. The court says that the reason for adopting this rule seems to it manifest; otherwise, on a question where symptoms only can furnish evidence of the mental condition of the subject of inquiry, essential elements on which the inquiry is founded would be entirely wanting to aid in the investigation of the question before the court, and the result could be reached only by the number of witnesses on each side, or their respective weight avoirdupois or personal appearance, on a matter where there should be a full investigation of all the conditions which must affect the judgment on a most complicated and difficult subject.

Medical Services for Wife Not Living with Husband.—The Fourth Appellate Division of the Supreme Court of New York says, in the case of Button vs. Weaver, that the husband is liable for actual necessaries furnished to his wife, unless he has made adequate provision for her maintenance, even though they are living separate. As long as the marriage relation continues, the obligation of the husband to support his wife remains. In this case the party sued left his wife—it may be, for the reason which amply justified his departure. She was still his wife, however. He declined to maintain her in his own household, and must make necessary provisions for her elsewhere. The physician suing had previously rendered services to the wife on the faith of the payment by the husband. These services were adjusted by a compromise and payment, and the husband then informed the physician

that he would not be responsible for any further services which the physician might render the wife. The services here sued for were performed after this notification, and the husband urged that circumstance as a reason why he was not liable. This position, the court says, would be impregnable if he had provided suitable medical attendance for her, or given her the means to procure it. A husband living separate from his wife may determine in a large measure in what way his credit is to be pledged, and in what manner the marital duty of providing for his wife is to be fulfilled. If, however, he forbid one from running an account against him for necessaries furnished for his wife in order to make the prohibition effective he must otherwise supply her needs, or permit her to pledge his credit elsewhere. In the present case he directed the physician suing to abstain from performing services concededly necessary for his wife, but made no other provision for her for this necessity. He endeavored to be relieved wholly from the liability resting on him. This he might not do. The physician was entitled to judgment, with interest, besides the costs and disbursemeuts of the action.

Duty to Provide Medical Attendance for Children.—As noted editorially on page 1028 of THE JOURNAL, October 24, 1903, the Court of Appeals of New York has reversed the decision, in the case of People vs. Pierson, reported on page 1464 of THE JOURNAL, May 23, 1903. Involved were the questions of the construction and constitutionality of the provisions of section 288 of the Penal Code of New York providing that "A person who (1) willfully omits, without lawful excuse, to perform a duty, by law imposed on him, to furnish food, clothing, shelter or medical attendance to a minor, ... or (4) neglects, refuses or omits to comply with any provisions of this section, . . . is guilty of a misdemeanor." The court says that it would seem that the legislative intent in adopting this provision of the code is reasonably clear, although possibly more precise language could have been employed. It contemplates that there are persons on whom the law casts a duty of caring for minors, but it does not specify the persons. There are, however, those on whom the duty is "by law imposed." They are designated in the statutes and in the common law as the parents, guardians, or those who by adoption or otherwise have assumed the relation in the place of a parent. The duty of such a person is specified by the provisions of the section. It is to "furnish food, clothing, shelter or medical attendance." Giving the statute a reasonable construction, by applying the rule of necessity, it is apparent that it means the necessary food, clothing, shelter, or medical attendance required for the preservation of the health and life of the child. The court quite agrees that the code does not contemplate the necessity of calling a physician for every trifling complaint with which the child may be afflicted, which in most instances may be overcome by the ordinary household nursing by members of the family; that a reasonable amount of discretion is vested in parents charged with the duty of maintaining and bringing up infant children; and that the standard is at what time would an ordinarily prudent person, solicitous for the welfare of his child and anxious to promote its recovery, deem it necessary to call in the services of a physician. In other words, the court holds that the section, properly construed, means that a person on whom the law has imposed the duty to care for a minor, who willfully omits, without lawful excuse, to furnish such minor with necessary food, clothing, shelter, or medical attendance, is guilty of a misdemeanor. Under this construction of the statute, the duty of parents to furnish medical attendance for their children, the court says, is expressly provided for and is made obligatory on them, even if they were exempt from such duty under the common law. The next question considered was what is meant by the term "medical attendance." Does it mean a regularly licensed physician, or may some other person render "medical attendance"? The conclusion reached is that the medical attendance required by the code is the authorized medical attendance prescribed by the statute; the court stating that this view is strengthened from the fact that the third subdivision of this section of the code requires nurses to report certain conditions of infants under two weeks of age "to a legally qualified practitioner of medicine of the city, town or place where such child is being cared for," thus particularly specifying the kind of a practitioner recognized by the statute as a medical attendant. Nor does the court consider that the provisions of the code are violative of the provisions of the Constitution providing for the free exercise and enjoyment of religious profession and worship, without discrimination or preference, in the state. It says, among other things, that the peace and safety of the state involve the protection of the lives and health of its children, as well as the obedience to its laws. Full and free enjoyment of religious profession and worship is guaranteed, but acts which are not worship are not. The law of nature, as well as the common law, devolves on the parents the duty of caring for their young in sickness and in health, and of doing whatever may be necessary for their care, maintenance, and preservation, including medical attendance, if necessary; and an omission to do this is a public wrong which the state, under its police powers, may prevent.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical News, New York.

December 5.

1 The Influence of Pasteur on Medical Science. C. A. Herter.
2 *Report on the Results with Different Kinds of Pure and Impure Milk in Infant Feeding in Tenement Houses and Institutions of New York City: A Clinical and Bacteriologic Study. Wm. H. Park and L. Emmett Holt.
3 *The Degree to which Substances Agglutinating the Dysentery Bacilli are Present in the Blood of Non-Infected Persons. Lawrence B. Pilsbury.
4 General Convulsive Tic with Coprolalia. Harry Morell.
5 *The Treatment of Anterior Dislocation of the Shoulder, with Report of a Case in which Reduction was Prevented by the Detached Greater Tuberosity. George T. Vaughan.
6 *The Mortality of Diphtheria in Private Practice under the Antitoxin Treatment. John Zahorsky.

2. **Milk in Infant Feeding.**—Park and Holt give their studies in full and sum up their results in a number of conclusions which can be condensed as follows: 1. During the cool weather neither the mortality nor the health of the infants observed were appreciably affected by the kind of milk or number of bacteria contained in it. The different grades of milk vary much less in their bacterial contamination in winter than in summer, the store milk averaging only about 750,000 bacteria per c.c. 2. During the hot weather, the resistance being lowered, the kind of milk influenced both the illness and mortality. Those who took condensed and cheap store milk did the worst. Those who received breast milk, pure bottle milk and modified milk did the best. The effect of contamination was very marked when the milk was taken without heating, but unless excessive it was very slight when heating was applied shortly before feeding. 3. The number of bacteria that may accumulate before the milk becomes noticeably harmful to the average infant in the summer differs with the forms present, the age of the milk and its temperature. When taken raw, the fewer the bacteria the better the results. Of the usual varieties over 1,000,000 bacteria per c.c. are bad for infants, though many infants take such milk without apparent harm. Heat above 170 F. destroys most of the bacteria present, and also some of their poisonous products. No harm from the bacteria previously existing in recently heated milk was noticed in these observations, unless they had amounted to many millions, but in such excessive numbers they were clearly deleterious. 4. When milk of average quality was fed sterilized and raw, those who received milk previously heated did on the average much better in warm weather than those who received it raw. The difference was so marked that there could be no mistake. 5. No special varieties of bacteria were found in unheated milk which seemed to have any special importance in relation to the summer diarrheas of children. The number of varieties was very great and varied according to the locality from which the milk came. None of the 139 varieties selected as most distinct injured very young kittens

when fed in pure cultures. A few cases of indigestion were seen immediately following the use of pasteurized milk more than thirty-six hours old. Samples of such milk were found to contain more than 1,000,000 bacteria per c.c., mostly spore-bearing types. The bad effects produced were not serious or lasting. At present it is rare for milk to be used thirty-six hours after heating. 6. After the first year of life infants are less and less affected by the bacteria in the milk derived from healthy cattle. When the milk had been kept cool the bacteria did not appear to injure children over three years of age at any season of the year unless in great excess. 7. Everything possible should be done by the health boards to improve the character of the general milk supplied, by enforcing proper legal restrictions regarding its transportation, delivery and sale. Such improvements are feasible in our large cities to secure milk which will be wholesome for heating for all classes of the population. The general practice of heating milk, which has become a custom among the tenement population, is undoubtedly a large factor in lessening the infant mortality. 8. The method of a central distributing station has the most advantages since it secures the more constant oversight of the child, and furnishes the food in a form that leaves the mother less to do and avoids most mistakes. This method of feeding deserves to be more extensively employed and might wisely be undertaken by municipalities and continued during the warmer months of the year. 9. The use for infants of milk in sealed bottles should be encouraged when possible. Only the purest milk should be taken raw, especially in the summer. 10. Since intelligent care is most needed, the education of mothers and those caring for infants is important. Properly qualified trained nurses and women physicians visiting the mothers and printed directions are the best means for this purpose. 11. Bad surroundings, though contributing causes, are not the chief factor. The better housing of the poor in the large cities will not of itself greatly reduce the infant mortality. 12. Observations indicate that close percentage modification of milk, though desirable in every case, is not necessary to obtain excellent results in the majority, and that a certain adjustment of the infant to its food is usually soon secured. 13. While it is true that even in the tenements the results with the best bottle-feeding are nearly as good as the average breast-feeding, it is also true that most of the bottle-feeding is so badly done that breast-feeding is infinitely superior and should be encouraged by all means and not discontinued without good and sufficient cause. The matter of expense alone will often favor continued nursing. 14. The injurious effects of table food to infants under a year old, and of fruits to all infants and young children in cities in hot weather should be more generally appreciated.

3. **The Dysentery Bacillus.**—Pilsbury has investigated the question as to the presence of agglutinins for the Shiga bacillus in non-infected persons, and concludes that, while his investigations are only tentative, they warrant the following deductions.

1. The serum of non-dysenteric adult patients does agglutinate the Shiga and acid type (Flexner) bacilli frequently in a 1 to 20 dilution and occasionally in a dilution as high as 1 to 100.
2. This agglutinating power is wanting in the blood of non-dysenteric young infants (under one year) rarely being present even in a 1 to 10 dilution.
3. There are certain differences in agglutinating capability between the Shiga and acid type (Flexner) bacilli, the former in these tests clumping somewhat more readily than the latter.
4. A decided and prompt reaction, under two hours, with the *Bacillus dysenteriæ* in dilutions of 1 to 20 or higher in young subjects (under one year) and in 1 to 50 or higher in older persons who have not recently suffered from chronic or subacute intestinal disease, is probably pathognomonic of acute epidemic dysentery.

5. **Anterior Dislocation of the Shoulder.**—Vaughan recommends in cases of anterior dislocation, which are generally of the subcoracoid variety, the old method of direct reposition. The surgeon places his fingers beneath and to the inner side of the head of the humerus with thumbs on the acromion process, and presses or pulls the head of the bone into place. Extension and counter-extension are also valuable and, he thinks, not appreciated. He applies this method by having the patient lie on the back with a folded sheet in the axilla, the ends extending diagonally across, above and below, the opposite shoulder where they are held by an assistant. The surgeon flexes the forearm on the arm to relax the biceps, takes hold of the arm by both his hands and makes gentle, steady traction, at first in the line of displacement, but as the traction increases, the arm is carried away from the side to an angle of about 45 degrees. The traction is continued just enough to make the muscles tense and an assistant will relieve the surgeon when tired without relaxing the traction. In a short time, from one to six minutes, the confidence of the muscles is gained, the spasmodic contraction ceases, the muscles relax and the head of the bone slips into place. It is doubtful whether this will benefit old cases, but it appeals to him and seems worthy of trial because it is painless and does not require anesthesia; is perfectly safe in recent cases; can be used by the general practitioner who would hesitate to try the more complicated methods; does not injure the tissues, and succeeds in most cases. Kocher's is the next method if the others fail. It consists of three steps: Flex the forearm of the affected side to a right angle with the arm, press the elbow to the side, and rotate the humerus outward by carrying the forearm around until it stands directly out from the side. Still holding the forearm at right angles to the body, bring the elbow forward or forward and slightly inward until the arm is horizontal. If the head of the bone does not slip into place during the second step, make internal rotation by placing the hand on the opposite shoulder and lowering the elbow into position. This method is painful and usually requires anesthesia and may do some damage to the tissues. If all these three methods fail in spite of anesthesia, the dislocation should be redueed by arthrotomy, provided aseptic operation is possible. Vaughan condemns the use of the foot, knee or fist in the axilla on account of the damage to the axillary vessels and nerves. He reports a case.

6. **Diphtheria.**—Zahorsky has studied the mortality statistics of diphtheria with the antitoxin treatment and has obtained data from about a dozen leading physicians in St. Louis who have employed it in their practice with children with surprising results—only 1.5 per cent. mortality in 1,610 cases. This includes the laryngeal cases, many of which were intubated. There are possibly certain errors such as the non-recognition of the disease in time, the use of insufficieint dose of antitoxin, the inefficient character of the serum and mistaken diagnosis, accounting for the occasional deaths. One of the physicians thinks no patient with diphtheria should die. Zahorsky believes the statistics are not singular, but can be duplicated anywhere by physicians who believe in antitoxin and know how to use it.

Medical Record, New York.

December 5.

7 *Lesions of the Eye which Occur in the Course of Diseases of the Heart, the Blood Vessels and the Kidneys. Charles Stedman Bull.
8 *Eye Lesions in Heart and Kidney Disease. Francis Kinnicutt.
9 *A Report of Three Years of Operative Work per Vaginam at St. Joseph's Hospital, Yonkers, N. Y. Henry Moffat.
10 *Inflammation of the Bladder. Henry G. Spooner.
11 *Observations on the Use of the Sahli Test-meal. Edward A. Aronson.
12 A Typical Case of Sporadic Cretinism. Frank F. Newell.

7 and 8.—See abstracts, THE JOURNAL, November 28, p. 1362.

9. **Vaginal Operations.**—Moffat has been led by his observation of the work of J. Riddle Goffe to employ the vaginal method, and he reports results. He concludes from his own personal experience and study of other cases:

1. The anterior vaginal route is most useful to reach and operate on the round ligaments in cases of retroversion of the uterus or procidentia; also for removal of small fibroids, either subperitoneal or pediculated, or for conservative work on the ovaries and tubes, or for removal of these organs.
2. The posterior incision is most useful for drainage in cases of pyosalpinx, salpingitis, pelvic abscess, some cases of tubal pregnancy with hematocele and puerperal sepsis, either with or without involvement of the tubes; for oöphorosalpingectomy, when the ovary is held backward and downward by old adhesions, and even in some cases of acute general septic peritonitis.

The more I see of this work the more am I impressed with the important truth that no pus tube should be attacked by any other route than by the vagina.

He thinks that hysterectomy is attended with very serious danger in puerperal cases and better results can be obtained by posterior section and removal of the infected tubes and the opening up and draining of pus collections as they may appear. In certain desperate cases this has given him very satis-

factory results. He summarizes the cases treated during the three years in the St. Joseph Hospital.

10. **Inflammation of the Bladder.**—Spooner gives an interesting discussion of the literature as to the causes of bladder inflammation, and illustrates the conditions found. He insists on a guarded prognosis in these cases. As regards tuberculosis he finds that primary tuberculosis is very rare. It generally occurs in complication with tuberculosis of the epididymis or of the prostate and extends by continuity. It is, therefore, more frequent in men than in women and children. The prognosis is always unfavorable.

11. **Sahli's Test-Meal.**—Aronson criticises Sahli's "butter and flour soup" test meal as follows:

1. When made according to Sahli's description, the soup is not homogeneous.
2. The application of the test-meal to general practice is entirely impracticable.
3. The time consumed in determining results is incommensurable with the advantages derived from its use.
4. The lack of agreement in every case between the clinical diagnosis and the diagnosis according to the Sahli method.

New York Medical Journal.

December 5.

13 *Report of a Case of Carcinoma of the Breast, treated by Massive Mercuric Cataphoresis. G. Betton Massey.
14 *Twists in Normal and in Congenitally Dislocated Femora. Robert Soutter and E. H. Bradford.
15 *Tuberculous Infection of the Peritoneum and Adnexa. Andrew S. Lobingier.
15½ Dry Hot Air in the Treatment of Bright's Disease (to be concluded). Clarence Edward Skinner.
16 *The Treatment of Acute and Subacute Anterior Gonorrhea by Retrograde Injections of Stronger Solutions of Silver. (Concluded.) Hermann G. Klotz.
17 A Visit to Naha Hospital. J. A. Guthrie.

13. **Carcinoma of the Breast.**—Massey selects this case on account of its typical character and micro-diagnosis, and also from the fact that recovery seemed to occur from a single application of massive mercuric cataphoresis. There is at present an excellent and healthy scar and the patient's condition is greatly improved. He thinks the method has the advantage over other procedures in the fact that the growth with all infected cells was devitalized at once, without the loss of blood, by a process that made operative reinfection of the wound impossible. Any outlying infected cells for a short distance beyond the area of destruction were also liable to be destroyed by the diffused chemical without detriment to the healthy tissues. The cancer occupying about one-half the breast was also destroyed without the entire sacrifice of the organ.

14. **Femoral Dislocation.**—Soutter and Bradford's article is a study of a special condition of congenital femoral dislocation; that is to say, the femoral twist. The article is too detailed for abstracting.

15. **Tubercular Peritonitis.**—Lobingier discusses the literature of tubercular peritonitis noticing especially its frequency in women which has led to the belief that the appendages may be primarily involved. Even though the evidences of appendiceal tuberculosis may not be marked, it is possible that it may exist as Whitridge Williams has shown. The symptoms are not definite or constant. Kelly regards pain in the back and hypogastrium as the most frequent symptom, though it is absent in many cases. The temperature is never characteristic and a number of other conditions may be simulated. Lobingier thinks that when the history of the patient, progress of the disease, character and location of the pain, tenderness, temperature, pulse, condition of the bowels and the state of nutrition are all carefully considered, it ought to be properly diagnosticated in any of its forms. As regards prognosis, authorities are quoted, and he favors Veit's opinion that while recovery may occur spontaneously, it is not to be counted on, and laparotomy in all but the ulcerative, caseous variety is almost always rewarded by cure or substantial benefit. Failures are due to advanced general infection of other organs. Recent cases should be operated on promptly and chronic ones operated on if spontaneous cure does not seem probable. Veit favors simple section in the linea alba, mopping out the effused fluid, and closure of the wound. When the adnexa are involved they should be removed. He ascribes the cure to the antitoxic action of the serum from the wound.

16. **Gonorrhea.**—Klotz' article is concluded in this issue with reports of cases of different classes. The primary ones he thinks are the most important and convincing, and while he is aware that many prominent specialists are adverse to early local treatment he does not agree with them, but holds that we should remove or destroy the irritant and infecting microbe as early as possible. While no one method will perhaps satisfy in all cases, he regards the method here proposed of retrograde injections of the stronger solutions of silver as worthy of a fair trial.

American Medicine, Philadelphia.

December 5.

18 *Treatment in 442 Cases of Movable Kidney without Surgical Intervention. Charles D. Aaron.
19 *A Logical Definition of Typhoid Fever. Henry A. Fairbairn.
20 *The Relation of the Rectal Valve to Obstipation; A Clinical Research. Thomas C. Martin.
21 Otitic Serous Meningitis: Lumbar Puncture, Recovery. Francis Huber.
22 A Case of Hysteric Tetany with Remarks on the Pathogenesis of the Disease. Alfred Gordon.
23 *Mycotic Disease of the Ear Canal: With Report of a New Fungus. S. E. Cook.
24 The Canteen. George M. Kober.

18. **Movable Kidney.**—Aaron holds that 90 per cent. of the patients who suffer from movable kidney and associated ptoses can be relieved without operation. Of the 442 cases here summarized, 321 were females and 121 males, ranging in age from 8 to 70. The right kidney was movable in 194 cases, the left in 20. In 228 both were adrift. Only 2 patients had Dietl's crises, and these were referred to the surgeon for operation. In 9, previous operations had been without results. In 215 cases there has been absolute recovery; 168 patients were improved and 59 have been either not improved or passed out of sight. The method which he advocates is the use of bandages to hold in their proper place the displaced organs. They should be constructed for each patient out of stiff material and should fit accurately. If the intestines are in position care must be taken that the hand does not press on them, or harm may follow. It is a good plan to inflate the colon, which is apt to be prolapsed. The position of the stomach, spleen and liver must be ascertained. He is in the habit of making a mould of the abdomen with a piece of lead so as to get the exact shape of the patient just at the lower edge of the displaced kidney, where the greatest pressure must come. There should be no pressure on the kidney itself or on the upper part of the abdomen. Ready-made bands are generally failures, and it sometimes takes a number of trials to get just the right appliance. Operations have not given as good results as his method. Besides properly supporting the kidney and other displacements, diet, tonics, electricity and massage are a help in the treatment. Seven cases are briefly reported.

19. **Typhoid Fever.**—Fairbairn insists on the proper definition of typhoid fever as being based on the presence of the Eberth-Gaffky bacillus.

20. **Houston's Valves.**—Martin reports a number of cases of valvular obstipation treated by valvotomy. He points out the symptoms of hypertrophy of the rectal valves as inability to properly defecate and the acquirement of the "physic habit" with periods of constipation interrupted by short periods of diarrhea, which may later be more frequent and finally be the predominant condition. Ultimately symptoms of intestinal obstruction may become pronounced, and if relief is not afforded, the case may end fatally. The symptoms of pain, aching in the iliac region, backache and sciatica, hemorrhage, catarrhal or membranous proctocolitis, prolapse, hemorrhoids, fistula, etc., may be signs or complications of the obstructing valve. Of the 40 patients here reported, 2 were not improved and 5 were improved, 3 of these with complications; 33 were cured. He says it should be recognized that valvular obstipation may recur, even after operation, by the development of hypertrophy in valves not previously subject to the disorder. The patient should be advised in case of a period of two or three days without defecation to use saline laxatives, glycerin and water enemata at a temperature of 120 F., remaining in bed for a day or two, at no time lying on the back, but to

keep the hips elevated, and then come to the physician who can directly massage the rectal valves through the proctoscope with a cotton-guarded forceps and spray the mucosa with a weak solution of nitrate of silver.

23. Mycotic **Disease of the Ear Canal.**—In the case reported by Cook a fungus was found, identified by Dr. Pound of the University of Nebraska, with the *Sterigmatocystis candida*, a species hitherto unknown or not reported as existing in the human ear canal. In these parasitic cases the prognosis is usually good, but relapses are frequent. The treatment should be directed to the restoration of the tissues to the normal condition by removal of the processes or fungus. Water should be used sparingly. Powders are better, but alcohol is an exception to other fluids, as it rapidly penetrates the crevices of the skin and cools the inflamed surfaces by its rapid evaporation. It should be used somewhat diluted. About 2 per cent. of salicylic acid will increase its utility. Burnett claims that a powder of one part of chinolin salicylate and 8 to 16 parts of boric acid will destroy the fungus as well as the micro-organisms of suppuration. Following the destruction and removal of the fungus and the products of inflammatory reaction, use in case of severe inflammation a solution of 20 minims of subacetate of lead; 6 minims of dilute acetic acid; 20 minims of opium sedative solution and 1 ounce of distilled water. Instil 10 drops, warmed, into ear canal, as directed. His own plan is after cleansing out the ear to use a dilute solution of alcohol, 60 to 80 per cent.

Boston Medical and Surgical Journal.

December 3.

25 *Hypernephroma. Paul Thorndike and John H. Cunningham, Jr.
26 *Papillary Adenocystoma of the Thyroid and Accessory Thyroid Glands. Harry C. Low.
27 *Intestinal Parasites in Appendicitis. J. C. Hubbard.
28 A Case of Sarcoma of the Lower Jaw. F. B. Lund.
29 Chronic Cyanosis from Acetanilid Poisoning. J. N. Hall and H. R. McGraw.

25. **Hypernephroma.**—This form of renal tumor occurs encapsulated in the kidney substance or just below the kidney capsule, usually in the adult male. It interferes with function by destruction of the renal substance or by compression or both together. Its growth is rapid and usually malignant, though it may be benign in some instances. It usually involves the renal vein and sometimes the vena cava, and metastases are formed along the blood current, especially in the lungs, liver and bones, but they do not involve the lymphatic channels. Three cases are reported by the authors, with postmortems, which illustrate the characteristic points of both the gross and microscopic pathology of these growths. An affected kidney may not be much increased in size, but is generally large. The general outline of the organ is usually retained and the surface is always nodular. On section the tumor tissue is generally yellowish, with a firm and distinct stroma. Some of these nodules show areas of hemorrhage and degeneration.

26. Accessory **Thyroids.**—Six cases, one previously reported, are here given by Low and he discusses the literature. He remarks on the rarity of metastases, the tendency to rapid recurrence and the necessity for supposing that there is a metaplasia of the cuboidal into the cylinder cells in the growth. In the treatment the fact that these tumors show a certain malignancy should be borne in mind. They should be thoroughly and completely removed if possible without incising the capsule surrounding the growth, great care being taken to prevent scattering in the wound bits of tissue which may become the germs of recurrence. The operation is generally difficult, and when incomplete there is almost always recurrence.

27. **Appendicitis.**—Two cases of appendicitis are reported, one in which there were found to be pin worms present, and in another a lumbricoid worm was discovered half way through a perforation. He concludes that intestinal parasites cause appendicitis by their action as a foreign body. Possibly their struggles may bring about a perforation where otherwise none would have occurred. Trichocephalus dispar has been proved to cause an inflammation of the appendix by injuring the mucous membrane while sucking the blood of the host. Ascaris has been found with a material similar to that in trichocephalus in its intestinal epithelium and, therefore, is supposed to attach itself to the mucosa of the host, and thus start appendiceal inflammation. As regards *Oxyuris vermicularis*, there is no proof that it causes appendicitis other than through its action as a foreign body.

Cincinnati Lancet-Clinic.

December 5.

30 Valvotomy with the Report of Three Cases. L. J. Krouse.
31 *Typhoid Gangrene of the Lower Extremities—134 Cases—Spontaneous and Surgical Amputation. (Concluded.) B. Merrill Ricketts.
32 Surgery of Prostate, Pancreas, Diaphragm, Spleen and Thyroid. (Continued.) B. Merrill Ricketts.

31. **Typhoid Gangrene of the Limbs.**—Ricketts' article is concluded in this issue with a study of the cases from the literature and report of a case in his own observation. His conclusions are given as follows:

1. Sudden pain in extremities at any time during typhoid bad omen.
2. Nearer Poupart's ligament the more dangerous.
3. Pain does not always indicate location of clot.
4. Clot most frequently in popliteal artery.
5. Rapid progressive gangrene beginning at toes indicates occlusion of aorta, iliac or femoral artery in Scarpa's triangle.
6. Slow progressive gangrene indicates occlusion of vessels from below upwards, especially in early stage.
7. Line of demarcation forms sooner during convalescence, but femoral or even the iliac may be occluded; even when it forms in lower leg may not form for six months.
8. Partial occlusion of vessel may occur during attack or convalescence with recovery, but complete occlusion may become gradual and gangrene take place one year later, as in Estlander's case.
9. The want of collateral circulation may be due to anomalous circulation.
10. Partial occlusion of one or more vessels may occur without gangrene, even though sensibility be impaired.

Cocain used subcutaneously or by blocking the nerve trunk may become an important factor in amputating extremities during typhoid fever.

Virginia Medical Semi-Monthly, Richmond.

November 27.

33 The Lorenz Method. Edmund W. Holmes.
34 Diet and Drugs in Nephritis. William S. Gordon.
35 *Some Common Malaria Neuroses not Discussed in our Text Books. R. Bruce James.
36 Lyssophobia—Report of a Case. S. T. A. Kent.
37 The Psychological Side of Medicine. Bittle C. Keister.
38 Further Remarks on Gonorrhea, its Complications, and our Responsibility in Authorizing Matrimony. Jos. Taber Johnson.
39 Exsection of Head of Colon and Part of the Ileum. A. H. Buckmaster.
40 Six Cases of Status Epilepticus Treated by Hyoscin Hydrobromate Hypodermically. George B. Fadeley.
41 Tubular Pregnancy. W. E. Anderson.

35. **Malarial Neuroses.**—James calls attention to the complications produced by malaria in pregnancy especially in inducing false labor pains. He also comments on cases in which the bladder becomes irritable from malarial poisoning, producing frequent and painful micturition which is relieved by arsenic and quinin. This trouble, he thinks, is quite common. Druggists treat many cases empirically by methylene blue and often hit the mark. Other organs that may be affected by malaria are the stomach, producing nausea more or less continuous, pain and dyspeptic symptoms and intestinal trouble. It may cause decided profuse diarrhea or even dysentery. He gives illustrations of several of these conditions, especially the false labor pains which are not apparently uncommon in cases in his part of Southern Virginia.

International Journal of Surgery, New York.

December.

42 *The Decision to Operate. A. M. Cartledge.
43 *The Surgery of Pulmonary Gangrene. L. L. McArthur.
44 *The Surgical Treatment of Varices and Varicose Ulcers. John Rodman.
45 The Surgical Assistant. (Continued.) Walter M. Brickner.
46 Absolute Occlusion of the Membranous Urethra: Suprapubic Cystotomy Combined with Perineal Urethrotomy. Albert L. Bennett.
47 Non-malignant Tumors of the Mammary Gland in the Female. Thomas H. Manley.
48 To Stain Silkworm-gut Ligatures. Augustin H. Goelet.

42.—See abstract in THE JOURNAL of October 24, p. 1040.

43. **Pulmonary Gangrene.**—McArthur reports 3 cases operated on, 2 successfully; that is to say, the patients recovered. He says that since under medical treatment 80 per cent. of the patients die, and only 29 per cent. of those operated on, surgical intervention is the appropriate treatment. While it is anatomically possible to separate the pleura from the chest

wall, it is difficult and often futile, and we should not lose much valuable time attempting it. A circular suture combined with gauze pressure packing for forty-eight hours is the best means of inducing adhesions. The *x*-ray may give valuable aid in the localization. Great care, however, should be taken in the selection of cases, but when the gangrene is localized and single, the most desperate cases should be given a chance, as they frequently recover with drainage.

44. **Varices and Varicose Ulcers.**—Rodman advocates the method of circumferential incision. The incision is made at the junction of the lower and middle third of the thigh, at about the triangular junction of the flexors. Preferably here, on account of the advantages as avoiding tension and the greater ease in dissecting out the veins. This incision avoids the external saphenous vein which, though often implicated, is never culpable. He says make the incision slowly and carefully in order not to endanger the veins and to avoid cutting one or two large nerves of the skin. Carry it down to the aponeurosis or fascia. Dissect and ligate the veins above and below the incision and excise between the ligatures. Apply dry dressings. Flex the knee and bandage the limb to the hip. Elevate the foot of the bed. Keep the patient confined one week, then let him walk on crutches; keep him out-doors with a bandage to protect the cicatrix and to support and regulate the circulation. Keep on the bandage for four weeks. The omission of the bandage compromises the integrity of the scar, and edema occurs that ought to be avoided.

Albany Medical Annals.

December.

49 Address. Medical Society of the County of Albany. John Archibold.
50 Insanity in Penal Institutions and Its Relation to Principles of Penology. H. E. Allison.
51 *The Release of Quarantine in Diphtheria. Thomas W. Salmon.
52 *What Is the Limit of Safety Where More Than One Operation Is Indicated? Albert Vander Veer.

51. **Quarantine in Diphtheria.**—From a study of 100 cases with special reference to the time of quarantine, Salmon concludes that the severity of the disease bears no relation to the duration of the infection and an arbitrary time-limit is not justifiable. The occurrence of positive cultures after a single negative one had been obtained is shown to be the rule, rather than the exception. The importance of taking cultures from nose as well as the throat in the pharyngeal cases is demonstrated by a number of instances included in the series in which the nose remained infected longer than the throat. He advises two negative cultures be taken on alternate days from both the nose and throat after two weeks have elapsed from the onset of the disease, a requirement which is not unfair to any, though permitting the release of only about 6 per cent. of the infected persons.

52.—This article has appeared elsewhere. See abstract in THE JOURNAL of December 12, p. 1496, paragraph 6.

Canada Lancet, Toronto.

December.

53 *Experiences in the Treatment of Pelvic Diseases in the Female Insane. Ernest A. Hall.
54 *Thrombosis of the Femoral Veins Following Aseptic Laparotomy. E. R. Secord.
55 Discussion on Tubercular Peritonitis. A. B. Atherton.
56 The Country Doctor. James S. Sprague.
57 Gunshot Wound of the Upper Arm with Non-union of Humerus and Destruction of the Masculospiral Nerve—Operation—Six months Later, Recovery. Hadley Williams.
58 An Unusual Case of Empyema of the Maxillary Antrum. Perry G. Goldsmith.
59 The Treatment of Inebriates. A. M. Rosebrugh.

53. **Pelvic Diseases in the Insane.**—Hall gives his experience in operating on insane females and claims that the recovery ratio is sufficient to encourage investigation. It warrants operative treatment in the insane. Mental disease is no excuse for neglect of pelvic abnormality. He thinks that special detention hospitals or special wards in general hospitals for the proper treatment of recent cases of insanity should be provided and also that a competent gynecologist should be associated with all state hospitals for the insane. He is rather severe in his criticism of alienists in this regard.

54.—This article has appeared elsewhere. See THE JOURNAL of November 28, paragraph 92, p. 1370.

Columbus Medical Journal.

November.

60 *The Quick and the Dead. Dickson L. Moore.

60. **The Quick and the Dead.**—This article, like that of the same title by Conklin previously abstracted in THE JOURNAL, is a plea for cremation. Moore points out the dangers of the ordinary burial methods and the advantages of the other practice.

The Clinical Review, Chicago.

December.

61 The Technic of Gynecological Work. Albert Vander Veer.
62 The Use of a Giant Magnet in the Removal of a Fragment of Iron from the Eye. J. Elliott Colburn.
63 The Diagnosis and Treatment of Hereditary Syphilis. N. Filatov.
64 Surgical Clinic. Frederick C. Schaefer.

Louisville Monthly Journal of Medicine and Surgery.

December.

65 Abscess of the Brain. H. Horace Grant.
66 Asphyxia Neonatorum. Edward Speidel.
67 Influenza in Children. Philip F. Barbour.
68 The X-ray and Surgical Tuberculosis. Thomas L. Butler.
69 Fracture of the Skull. Irvin Abell.

Pediatrics, New York.

October.

70 *On the Use of Opium in the Carditis of Children. Alexander Morrison.
71 *Infantile Colic. Alexander McAllister.
72 *Constipation in Infants and Young Children. W. J. Fenton.

70. **Opium in the Carditis of Children.**—Morrison pleads for palliative remedies as life-savers in cardiac inflammations in children, and the value of opium properly used in these cases. The younger the patient the greater the care in its use, but even young children when excited locally and generally by an actively irritative process, can tolerate larger doses than under normal circumstances. He quotes cases at length, showing the tolerance of children for considerable doses of morphin. While the personal case he relates resulted fatally the relief it gave was marked and the results of postmortem examination revealed the anatomical conditions underlying the symptoms. In combating carditis he feels disposed to give permanent place to opium.

71. **Infantile Colic.**—The dangers of the rubber nipple, especially those with a long tube, are emphasized by McAllister, who would never use any nipple continuously over two weeks. He insists on having two, one being kept in an alkaline cleansing wash, while the other is being used. The dangers of too rapid feeding are pointed out, and he remarks on the necessity of careful physical examination as to the cause of the colic. In the treatment too careful circumspection in the use of drugs can not be practiced. Many cases can be permanently relieved by a little manipulation with or without gentle massage of the abdomen. Next to this is warmth applied to the abdomen, dry or moist, or internally in the form of sips of hot water, or hot enemas. In spite of all efforts, however, some infants require medication with carminatives. In these cases the standard teas frequently prove too weak. Paregoric with opium excluded is a remedy of considerable value. The dose is easily regulated, beginning with a few drops. He quotes Rotch as advising the use of carminatives between feedings, and gives one of his favorite prescriptions. It consists of 40 grs. of sodium bicarbonate; 40 minims of aromatic spirits of ammonia; 30 minims of glycerin and 2 ounces of peppermint water. One teaspoonful to be given between feedings. When acidity is not an element requiring special treatment, asafetida is frequently of value. The use of narcotics is only exceptionally permissible.

72. **Constipation in Infants.**—The causes and treatment of constipation are reviewed by Fenton. In the majority of cases it depends on an excess of proteid and deficiency of fat in the diet. He notes that boiling and pasteurizing seem to affect the milk for infant feeding. He quotes Starr that carefully standardized laboratory milk is also liable to produce intestinal disorders and malnutrition in some cases, domestic modification of milk being freer from these dangers. In hand-fed children constipation is much more frequent and often difficult of treatment. Starchy food may be given too early and there may be a general depression of the health from other causes, such as want of fresh air or habitual use of enemata, while remedies

injudiciously given for colic may be the cause. Want of a sufficient quantity of fluid drunk may be the cause. The constipation may disclose a serious nervous disorder. He insists on a quiet, regular life for the nursing mother with sufficient rest at night, plain nourishing diet, etc. The composition of the milk varies at different times. Regularity in the infant's feeding is of importance. If medicinal treatment is also necessary, fluid magnesia, a few grains of carbonate of magnesia, manna, or an occasional dose of castor oil may be given. A small suppository of glycerin or the domestic remedy of a small cone of soap, inserted into the rectum, is useful and efficacious. It is wise to trust to the natural appetite of hand-fed infants where vomiting is absent and the food is given regularly. Sometimes the milk should be stopped and whey broth, meat juice, albumin water or a thin dextrinized gruel be substituted. Frequently, partial or complete peptonization suffices. A teaspoonful of fine oatmeal made into a paste and stirred into the morning milk is sometimes useful. The common cause of constipation in infants being excessive proteid and deficient fat, these defects must be met by a suitable addition of cream. Massage is a valuable remedy. For drugs he mentions in the simple cases a teaspoonful of manna dissolved in hot water or a few grains of phosphate of soda, either of which may be added to the milk, and usually prove sufficient. Fluid magnesia, or ½ to 1 grain of sulphur may be given. For co-existing colic and flatulence some mild cathartic is employed. The aim is to get the bowels freely open first and then keep them open by the use of drugs as little stimulating as possible. In older children regular habits should be encouraged. Enemata are of service if fecal masses have collected in the rectum, but their use should not be persisted in.

Archives of Ophthalmology, New Rochelle, N. Y.

November.

73 *On Glaucoma. K. R. Wahlfors.
74 A Clinical Contribution to Traumatic Enophthalmus. Dr. Purtscher.
75 The So-called Embolism of the Central Artery of the Retina and of Its Branches. Max Reimar.

73. **Glaucoma.**—The long prevalent theory of increased tension as the cause of glaucoma is combated by Wahlfors. It is true that increased tension exists in the acute, inflammatory type of disease, but in the simple form it is absent. He does not, however, consider the two types as distinct. The real origin of the trouble he thinks is in atrophy of the choroidal elements. This destroys the nerve sensory apparatus and leads to increase of tension by paralysis of the muscular network of the choroid, slowing the course of the currents of liquid. The channels of exit thus become blocked and cause retention. It is here and not in the uveal region that the cause of increased tension is to be found. Excavation may occur without an increase in the tension, as it is liable in simple glaucoma where there is no increase of tension. He ascribes excavation to atrophy of the connective tissue composing the framework of the lamina cribrosa and the diminished resistance of the papillary tissues. Atrophy is probably primary and excavation secondary. As regards treatment he thinks that there is little that can be done for the processes in simple glaucoma excepting by repeated injections of strychnin, which in a certain proportion of his cases have been beneficial. By giving these injections one a day for ten or twenty days, repeated three or four times a year, he has been able to preserve vision for many years. In acute glaucoma iridectomy is of value as it prevents venous stasis—the last link in the chain of congestive glaucoma. It may also be of prophylactic value in simple glaucoma as preventing acute exacerbations.

Medical Examiner and Practitioner, New York.

November.

76 *The Relation of Tubercular Glands to Life Insurance. Daniel N. Eisendrath.
77 *The Significance of Intermittent Albuminuria in Life Insurance Work, with Report of a Case. Andrew H. Whitridge.
78 Tetanus—with Descriptive Case. Joseph B. Bissell.
79 Sundry Random Thoughts on Life Insurance Matters. A. Noel Smith.
80 A Study of Light. Ultra Violet Light. Part II. J. Mount Bleyer.
81 Rheumatism and Gout. C. L. Steensen.
82 The Element of Anemia in Diseases of Women. Everett S. Hicks.

76. **Tubercular Glands and Life Insurance.**—Eisendrath has studied the literature and statistics of the subject. From these as well as his own observation he concludes that tubercular glands of various regions are frequently followed by foci, mostly of the lungs (28 per cent). Next in frequency are the bones and joints. Operative treatment gives the best number of permanent recoveries (54 to 80 per cent.). Every insurance examiner should keep in mind the above figures and investigate carefully as to the possibilities of a late focus following tuberculous adenitis in early life.

77. **Intermittent Albuminuria.**—Whitridge discusses the subject and reviews the opinions of various authorities on the question. He thinks that a mere trace of albumin in the urine does not justify the turning down of an applicant for life insurance, but he should be kept under observation and repeated examinations made. In all cases it is important to know the amount of urine passed daily. If there is no history of frequent micturition, if the urine is of normal specific gravity and the urea normal, he thinks the applicant is insurable.

Medical Fortnightly, St. Louis.

November 25.

83 The Mesoappendix. Byron Robinson.
84 Two Cases of Impacted Fracture of the Hip Joint—One Treated with Hodgen Splint and One Treated with Liston Splint—Comparison of Treatment. W. J. Clark.
85 Gunshot Wound of Abdomen. W. C. G. Kirchner.
86 Chronic Interstitial Nephritis. R. A. Bate.

Richmond Journal of Practice.

October.

87 The Terminal Symptoms of Chronic Bright's Disease. William S. Gordon.
88 Treatment of Eclampsia. J. M. H. Rowland.
89 Laboratory Diagnosis in Gastric Disorders. E. Guy Hopkins.

Northwest Medicine, Seattle, Wash.

November.

90 Address, British Columbia Medical Association. O. M. Jones.
91 What Can Be Done for Cancer? Emory Lanphear.
92 The Surgical Problem in Prostatic Hypertrophy. (To be continued.) George W. Hawley.
93 Etiology and Treatment of Pathologic Conditions of the Prostate. W. S. Durand.

Medical Mirror, St. Louis.

October.

94 Fragments of a Diary. I. N. Love.
95 The Mother, Before Conception, During Pregnancy, After Childbirth. A. Campbell White.
96 Treatment of Lupus. Norman Barnesby.
97 Latent and Masked Estivo autumnal Malarial Fevers—Subcontinued Estivo-autumnal Malarial Fevers and the Combined Infections. W. E. Fitch.
98 X-Iodo Bismuth. J. Leffingwell Hatch.

Canadian Journal of Medicine and Surgery, Toronto.

December.

99 Spinal Injuries External to the Spinal Cord. Thomas H. Manley.
100 Address, Toronto General Hospital Training School for Nurses. Allen Baines.
101 Deformities and Disabilities Resulting from Injuries or Diseases of the Epiphysis. B. E. McKenzie.
102 Notes from a Recent Trip to New York. John Hunter.
103 The Surgical Treatment of Hallux Valgus and Bunion. James Newell.
104 Two Cases of Normal Pregnancy Following Operation for Extra-uterine Pregnancy. Francis D. Donoghue.

Kansas City Medical Record.

November.

105 The Subcutaneous Use of Paraffin in Deformed Noses, with a Supplementary Report. Hal Foster.
106 Electrotherapeutics. C. S. Roberts.
107 Orificial Surgery. A. Van Meter.
108 Prophylaxis and Treatment in Incipient Tuberculosis. T. F. Lockwood.

Journal of the Kansas Medical Society, Topeka.

December.

109 Case of Intussusception. R. S. Magee.
110 Echinacea. L. E. Sayre.
111 Intrauterine Smallpox. H. T. Jones.
112 Chancres and Chancroids. Hugh Wilkinson.
113 Infectious Diseases and Quarantine. (Continued.) Arthur W. Clark.

St. Paul Medical Journal.

December.

114 The Treatment of Rhinophyma. J. Collins Warren and Charles J. White.
115 The Ill-health of Margaret Fuller-Ossoli. George M. Gould.
116 Nephrolithiasis. James H. Dunn.
117 Pregnancy, Labor and Lying-in. Frederick Leavitt.
118 Notes on Seven Years of Obstetric Practice. G. J. Tweedy.
119 Acute Prostatitis. F. M. Archibald.
120 An Ideal Treatment for Gonorrhea. Burnside Foster.

Texas Medical News, Austin.

November.

121 The Management of Crushing Injuries of the Hands and Feet. R. W. Knox.
122 Streptolyptic Serum in the Treatment of Mixed (Streptococcic) Infection of Pulmonary Tuberculosis. Boyd Cornick.
123 Constipation as a Factor in Diseases of the Rectum and Colon. J. E. Morris.
124 The Management of Appendicitis, as Met in Country Practice. B. Nowlin.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

November 28.

1 *The Treatment of Some Acute Visceral Inflammations. D. B. Lees.
2 Syphilitic Joint Disease. E. Percy Paton.
3. The Spread of Ankylostomiasis. T. H. Hendley.
4. A Case of Abdominal Hysterectomy for Retroperitoneal Cervical Fibroid. Arthur H. N. Lewers.
5 Two Cases of Retroperitoneal Cysts: One Causing Obstructive Jaundice and the Other Simulating an Ovarian Cyst. Charles A. Morton.
6 Retroperitoneal Manipulation—A Method of Separating Deep-seated, Plastic, Pericecal or Other Peritoneal Adhesions. G. Gore Gillon.
7 *Subperitoneal Lipomata. John Campbell.
8 *The Treatment of Visceral Papilloma by Injections. Herbert T. Herring.
9 Case of External Urethrotomy Treated by Continuous Retention of a Rubber Catheter Held in Position by a "Perineal Stop." C. Hamilton Whiteford.
10 The Pathology of Hallux Rigidus. J. M. Cotterill.
11 *Further Notes on Leishman's Bodies. Ronald Ross.
12 *The Etiology of One of the Heterogenous Fevers of India. C. Donovan.

1. **Pneumonia.**—Lees' second lecture is on pneumonia. He says that when the vitality is feeble or other viscera are damaged or there are old pleural adhesions, when the lungs are fibroid or emphysematous, or the patient is chronically poisoned by alcohol, tobacco or sepsis chance for recovery is small. Pneumonia kills, he says, by a paralyzing overdistension of the right heart on which the toxin seems particularly to act, as particularly distinguished from that of rheumatism which affects the left heart. Most important in treatment is constantly to watch the right heart, preventing overdistention by timely removal of a small quantity of blood, a precaution too often neglected, which fact he thinks is responsible for a large part of the mortality. The procedure should be repeated when necessary. The diet should be such as can be taken without effort and easily assimilated. Milk meets these indications and acts also as a diuretic, thus helping to carry off the toxins. We have to consider, however, that an increased amount of fluid increases the amount passing through the right heart, and he would, therefore, only give small quantities of predigested and highly nutritious elements during the intenser stages of the disease when this cardiac complication is marked. He suggests one-half ounce of sodium and potassium bicarbonate, dissolved in 2 ounces of malted milk every hour for an adult; for a child, two teaspoonfuls in an ounce. After the leech has relieved the heart it is possible to give considerable quantities of water. During the first two or three days he would give milk alone in quantities of two to three pints a day, but not later. Sleep must be obtained, and if pain demands it morphin may be necessary. Even at a late stage or in severe cases morphin may sometimes be safely given if the right heart has been relieved and the air passages cleared by venesection an hour or two previously. But if the right heart has been duly relieved by leeches and local applications of the icebag made over inflamed areas, morphin is rarely necessary unless the pleura is seriously involved. He thinks strychnin is the most useful cardiac tonic; this should be given subcutaneously in dose of ½ to 1 minim of the official solution, B. P., twice daily, in the beginning with a child; and in the adult 2 minims morning and evening at first, increasing to as much as 5 minims if necessary. Atropin by subcutaneous injection is often useful, especially in children; in adults belladonna is less convenient. Oxygen by inhalation assists aeration of the blood and improves the quality of the blood supply to the heart. It is a true cardiac tonic, but neither strychnin or oxygen will save the patient if the right heart is allowed to become paralyzed. Digitalis is most likely to be of service after the cardiac symptoms are relieved and the fever is moderate. Ammonium carbonate may be given when there is much secretion in the bronchial tubes and repeated small doses of alcohol may be of service, but large quantities are likely to do more harm than good. It is absurd to think that brandy can support the heart when the right side has become paralyzed from overdistension. Ice applications over inflamed areas are of great value, and must be used much more freely than in pericarditis. Lees suggests also that such applications lessen the proliferation of bacteria and quotes Dr. Neave, who has investigated on this point. From Washbourn's experiments he concludes that lung consolidation and pyrexia are largely due to the local effects of an albumose produced by the growth of the pneumococcus.

7. **Subperitoneal Lipomata.**—Campbell reports two cases, one of the malignant and one of the benign variety. Subperitoneal lipomata are much more frequent in women than in men—a ratio of 25 to 16, and are more frequent on the right side. The malignant variety includes retroperitoneal tumors which originate on the posterior aspect of the abdomen, difficult and almost impossible to remove, microscopically, sarcomatous in whole or in part. Those affected are at first in good health, but ultimately waste while the tumor increases. The benign variety includes lipomata of the broad ligament, omentum and appendices epiploicæ. These tumors can be safely removed. They do not cause much general deterioration of the health.

8. **Vesical Papilloma.**—Three cases are reported by Herring, who thinks they demonstrate the following facts:

1. Recurrence of papilloma after removal by suprapubic cystotomy, which, unfortunately, is very frequent, may be effectually held in check by injections of silver nitrate. 2. If injections are made, when it has been found impossible to remove the growth entirely by operation, the recurrence of the symptoms is retarded longer than could be expected without the treatment. 3. Much of a tumor may be removed by the urethra without serious hemorrhage, and a result gained equal in some cases to that of a suprapubic operation. 4. There is reason to hope that papillomatous growths may be entirely destroyed by long-continued applications of silver nitrate.

The conclusions, therefore, that may be drawn, although confirmatory evidence is needed, are: (*a*) Injections should be made after operations for the removal of the growth, whether the operator is satisfied that he has done so efficiently or not. (*b*) The urethral route should be tried, when removal of the papilloma is contemplated, before a more serious operation is undertaken.

The question whether most cases of papilloma should be operated on through the urethra before the injections are commenced, even when the diagnosis is made early and the tumor is small, or whether injections alone should be relied on, requires further investigation. I should be inclined under favorable circumstances to give the former plan another trial; for, in the first place, the operation need not be severe nor attended with serious consequences, if strict attention is paid to sterility in instrumentation; in the second, the improved instruments recently made by Leiter and the advantages derived from adrenalin in stopping hemorrhage, render manipulation more certain; and thirdly, the size of the tumor to be attacked by the injection afterwards will be less even if only small portions are removed, and consequently the time required to check the disease shortened. In the female I have no doubt that this is the proper proceeding. Suprapubic cystotomy can hardly ever be wanted when access to the bladder is more easily gained through the urethra by the means of Kelly's tubes.

11. **Leishman's Bodies.**—Ross concludes that these bodies belong to a new genus of sporozoa and that the individual bodies are spores produced in the matrices, which would appear to be relics of the parent organism. He has no scientific name to offer for the new genus, but suggests "Leishmania." If such were adopted the species would be "Leishmania donovani," as Laveran has used the name "Piroplasma donovani."

12. **Leishman's Bodies.**—Donovan briefly reports that he finds these bodies in the spleen of patients suffering from an irregular fever, with enlarged spleen and liver, paroxysmal edema of the feet, congestion of the lungs, occasional subcutaneous hemorrhages and cancrum oris. He thinks they probably are the causal factor. Medication by quinin, arsenic and sodium salicylate has proved ineffectual.

The Lancet, London.

November 28.

13 *The Administration of Chloroform to Man and to the Higher Animals. Augustus D. Waller.
14 The Present State of the Irish-Poor-law Medical Service. R. F. Tobin.
15 Some Questions in Seaside Climatology. Alfred F. Street.
16 Patent Medicines. Robert Hutchison.

17 On Albuminuria as an Accompaniment of Diabetes Mellitus. (To be continued.) F. W. Pavy.
18 Fracture of the Fifth Cervical Vertebra; Recovery. W. E. F. Tinley and A. R. Jones.
19 A Confirmatory Test for the Presence of Meconic Acid. F. N. Windsor.
20 A Case of Teratoma of the Neck. F. Bolton Carter.
21 Note on a Dicephalous Monster. Alexander M. Elliot.
22 Remarkable Transposition of the Viscera. John C. Thomson.

13. **Chloroform.**—Waller insists on the importance of accurate dosage of chloroform in anesthesia; this can be obtained by Dubois' pump. Chloroform vapor should be maintained under 1 or 2 per cent. of the inspired air. He relates experiments showing the use of this method; 5 per cent. is dangerous, between 1 and 2 per cent. is the safest. Rule of thumb methods are not accurate or safe.

Journal of Tropical Medicine, London.

November 16.

23 *Calabar Swellings on the Upper Congo. Patrick Manson.
24 *Goundou: Its Relation to Yaws. A. Nell.
25 The Effect of Drainage and Other Measures on the Malaria of Klang, Federated Malay States. (To be continued.) Malcolm Watson.
26 Municipal Sewerage. (Continued.) Fred. Smith.

23. **Calabar Swellings.**—Manson reports a case in a missionary on the Congo. The disorder known under this name consists of attacks of edematous swellings of certain parts of the body with pain and loss of power. As the cases are found in association with the *Filaria loa* and appear to be especially prevalent in the area of its distribution, the conjecture that they are caused by this nematode seems not unreasonable. It occurred to him that these swellings might be provoked by the discharge into the connective tissues of embryos by a parental loa. From the connective tissue they may find their way along the lymphatics into the general circulation where their life may be limited. He thinks an examination of the blood soon after the appearance of a Calabar swelling might disclose an embryo. It seems to be a disease which specially affects males; only one woman, as far as he has known, has been attacked among the missionaries on the Congo.

24. **Goundou.**—Nell concludes that yaws bears a causal relation to goundou, which consists in symmetrical osteomata on the nasal processes of the superior maxillary bones, always congenital, either apparent at birth or to be detected on close examination. The general enlargement is always concomitant with body growth and stops with full adult life. An acute enlargement or an attack of yaws follows. Some congenital cases are not noticeable if no acute enlargement has occurred, and adults with slight ridges or bosses should be questioned regarding goundou or yaws in the family.

Australasian Medical Gazette, Sydney.

October 20.

27 Mechanism of the Paroxysmal Neuroses. Francis Hare.
28 Management of Epidemic Plague. J. Ashburton Thompson.
29 A Case of Aneurism of the Transverse Aorta. Louis Henry.
30 On Certain Pelvic and Abdominal Operations. E. T. Thring.
31 Gastric Surgery. R. Humphrey Marten.
32 Notes on Gastric Surgery. W. Anstey Giles.

Intercolonial Medical Journal of Australasia, Melbourne.

October 20.

33 Movable Kidney. G. Rothwell Adam.
34 The Surgical Aspect of Floating Kidney. H. Critchley Hinder.
35 Movable Kidney in Woman. J. A. G. Hamilton.
36 Cases of Arthritis Resembling Acute Rheumatism. G. R. Baldwin.
37 Post-nasal Growths: A Criticism and a Comparison. W. Kent Hughes.
38 Case of Malignant Disease of Face Treated by Plastic Operation. W. Moore.
39 Good Result Following Extraction of Lenses for High Myopia. James W. Barrett and W. F. Orr.

Bulletin de l'Académie de Médecine, Paris.

40 (LXVII, No. 36.) Transmission des maladies parasitaires du sang par les Tabanieus (horse flies). P. Mégnin.
41 A propos de la maladie du sommeil (sleeping sickness). Discussion.
42 Potable Water in Garrisons. Discussion.
43 (No. 37.) *La nature syphilitique et la curabilité du tabes et de la paralysie générale. Leredde.
44 Address at Inauguration of Monument to Charcot. Raymond.
45 *Antituberculosis Serum and Vaccine. A. Marmorek.

43. **Curability of Tabes and General Paralysis.**—Leredde proclaims that tabes and general paralysis are curable when antisyphilitic treatment is commenced in time with adequate dosage. He believes that it is possible to inject a healthy subject with .035 gm. of metallic mercury daily, that is, twenty times the usual dosage of Panas' biniodized oil. Inunctions are uncertain and unreliable.

45. **Marmorek's Antituberculosis Serum and Vaccine.**—Marmorek's communication read before the Académie November 17 is not published in the *Bulletin*, only the title being given. A detailed report of it was embodied in an editorial in our last issue. [Our Italian exchanges comment that the principle of the antitoxic serum and the technic of its production are identical with those of Maragliano's serum which has been in constant use for eight years and which has abundantly established its efficacy in appropriate cases. Maragliano's annual reports have been chronicled in THE JOURNAL from year to year. Marmorek's article is published in full in the *Archives Gen. de Médecine* of November 24, No. 47.—ED.]

Presse Médicale, Paris.

46 (II, No. 90.) *La circulation du liquide céphalo-rachidien. F. Cathelin.
47 (No. 91.) Exérèse du trijumeau (of the trigeminal). L. Ramonède.
48 Hydro-Dilator for Treatment of Stricture and Dilatation of Cervix. P. Bakaleinik (Kiev).—Traitement des rétrécissements de l'urètre, de l'esophage, de l'anus. Dilatation du col utérin. Instrument illustrated.
49 (No. 92.) L' enseignement technique à la clinique ophthalmique de l'Hotel-Dieu. F. de Lapersonne.
50 Atherome aortique expérimental par injections répétées d'adrénaline dans les veines. O. Josué.
51 Traitement chirurgical de l'occlusion intestinale aigue. L. Braun.

46. **Circulation of Cerebrospinal Fluid.**—Cathelin announces that we can accept as established a circulation in the cerebrospinal fluid similar to that of the lymph. It issues from the blood and returns to it through the intermediation of the lymph circulation. He describes with diagrams the mechanism as he has traced it out.

Revue de Gynécologie, Paris.

Last indexed page 1171.

52 (VII, No. 5.) Les kystes racémeux de l'ovaire. F. Jayle and X. Bender.
53 Etude anatomique et pathogénique des kystes hématiques primitifs de l'ovaire. F. Potier.
54 *Traitement opératoire de l'exstrophie de la vessie. Transplantation des urétères par le procédé de Maydl. E. Orloff (Charkov).
55 De l'occlusion au niveau de l'angle colique gauche (at left angle of colon). H. Morestin.
56 Traitement des abcès pelviens d'origine appendiculaire en particuller par l'incision rectale. L. Bérard and Patel (Lyons).

54. **Operations Performed to Date for Exstrophy of Bladder.**—Orloff includes in his comprehensive monograph all cases he has been able to find in which Maydl's method of transplanting the ureters has been followed or more or less modified. It forms an array of 61 cases including 5 from his own experience. Three of his patients did not long survive the operation. The results were excellent in the 2 others. He also reviews other operative methods with their results to date.

Semaine Médicale, Paris.

57 (XXIII, No. 46.) *Multiplicité et complexité des produits solubles développés au cours d'une infection. Charrin.
58 Letter from America. F. Munch.—L'exercice de la médecine aux Etats Unis.
59 Les courants de haute fréquence dans le traitement de la méralgie paresthétique. H. Bordier.
60 La photothérapie des adénites et des arthrites tuberculeuses. Bellemanière.
61 Traitement du lupus par les cautérisations ignées associées aux applications d'acide picrique. Gaillelon.
62 (No. 47.) *La dilatation forcée du sphincter anal comme moyen de traitement de l'entérocolite muco membraneuse. A. Roussel.
63 Letter from America. Le corps médical aux Etats-Unis. F. Munch.

57. **Products Elaborated During Infections.**—Charrin has for years been conducting experimental researches with the *Bacillus pyocyaneus*, as reported from time to time in these columns. Reviewing his own work and that of others he remarks that two principal characteristics mark the progress of medical science in late years: 1, the realization of the fact that most of the symptoms and changes that develop in the course of infections are due to the action of toxins, a multiple

and complex intoxication. Some of the toxins proceed directly from the bacteria, others indirectly from their action, either from the changes induced in the humors or tissues by the direct action of the germs or their secretions and excretions or from the reactions of the cells and organs under the influence of these elements. This mechanism of intoxication may proceed from the interior or exterior; it may be organic or inorganic, of bacterial or cellular origin. In other words, the same as in actual poisonings or autointoxications, the toxic compounds preside over the genesis of the infectious or diathetic accidents. The second characteristic of recent progress is the growing importance accorded to the organism itself, the *rôle de l'économie*, as Charrin calls it, in the genesis of pathologic conditions. We have already partially restored the "soil" to its old predominant place in the etiology of disease. We recognize the predisposition afforded by getting chilled, over-exertion, inanition, etc., and the organism is coming into its own in this respect more and more every day. For instance, in very young infants the disturbances consecutive to chronic gastro-enteritis are due in certain cases to the insufficiency of the intestinal defenses. During the acute stage the numbers or the virulence of the poisons engendered in the digestive tract are responsible for the symptoms observed, but in many cases, after this stage is past, the poisons are found to be no more active than those elaborated in the normal infantile intestine. Their peculiarly deleterious action is due to the lack of protection against them. The direct or indirect action of the tissues and of the physiologic apparatus in the mechanism of morbid phenomena is becoming more manifest every day. Cellular pathology is resuming its rights, not altogether Virchow's old cellular pathology, but a conception singularly enlarged. The idea that a microbe engenders disease by the aid of its toxin is being shown up more and more to be altogether too limited and inadequate to conform to what we are learning in regard to the multiplicity and complexity of the soluble products elaborated during the course of an infection by the interaction of bacteria and the cells of the organism. Immunity is only a special phase of nutrition, the consequence of these interactions.

62. **Dilatation of Anus as Cure for Enterocolitis.**—Roussel had occasion five years ago to treat a woman of 40 for both fissure of the anus and mucomembranous enterocolitis. He proceeded to the forcible dilatation of the anal sphincter for the first trouble and found to his surprise that the second was also favorably influenced and soon healed. He has since treated 4 other cases of mucomembranous enterocolitis alone by forcible dilatation of the sphincter, and in each case the results of this intervention have been equally satisfactory. One of the patients had two relapses, once during pregnancy and again during lactation, and in another patient the stools occasionally show a tendency to the mucomembranous form, but it is speedily dissipated by a little castor oil and oil injections. He attributes the success of the measure in these case to the action of the dilatation in arousing the contractility of the atonic colon and banishing the spasmodic contraction of the lower part of the intestine. He prefers the fingers to any instrument for the dilatation, and afterward inserts a wick in the rectum, expelled with the first discharge. Any tendency to constipation afterward is easily corrected by the ordinary drugs, previously ineffectual.

Archiv f. klinische Chirurgie, Berlin.

Last indexed page 1374.

64 (LXXI, No. 2.) *Ueber Pseudo-Leukämie und verschiedene verwandte Krankheitsformen. A. Pappenheim (Berlin).
65 Mechanism of Ileus from Knot Formation. G. Ekehorn.—Ueber die gewöhnlichsten, durch Verknotung verursachten Formen von Ileus, mit bes. Rücksicht auf den Mechanismus der Knotenbildung.
66 *Perforating Strumitis. E. Payr (Graz).—Ueber Kropf-Fisteln.
67 *Ein Neuer Blasenschnitt (Cystotomia perinealis). R. Frank (Vienna).
68 *Dangers of Raising the Pelvis. P. Kraske.—Ueber Beckenhochlagerung und ihre Gefahren.
69 Extirpation of Scapula. K. G. Lennander (Upsala).—Exstirpation des rechten Schulterblattes wegen chronischer Myelitis; Fixation des Oberarms am Schlusselbein durch einen Metaldraht und durch Muskel-Plastik.
70 *Tuberculosis of Posterior Segments of Spine. J. Wieting.—Ueber die Tuberkulose der Wirbelsäule, besonders ihrer hinteren Abschnitte, und über die Entstehung retropharyngealer Abszesse.
71 The Barbadoes Glandular Affection. Gross (Jena).—Die Drüsenkrankheit von Barbados.
72 *Perforatio thoracis translateralis duplex mit Ausgang in Heilung. Franke (Brunswick).
73 *Experimental Research on Action of Local Stimulation and Local Application of Heat. Wessely (Berlin).—Zur Kenntnis der Wirkung lokaler Reize und lokaler Wärmeapplikation (nach Experimenten am Auge).
74 Zur Aetiologie der Blasen-Ektopie. Enderlen (Marburg).

64. **Pseudo-Leukemia and Allied Affections.**—Pappenheim summarizes his views in the statement that multiple myeloma and malignant lymphoma as well as the spleen affection, pseudo-leukemic splenomegaly, are merely various manifestations of one and the same process, a hyperplastic-lymphosarcomatous process—pseudo-leukemia.

66. **Goiter Fistula.**—Payr has had occasion to observe 4 cases of perforating strumitis. He reports the details, with cuts, and reviews 36 similar cases which he has found in the literature. Treatment can be only the extirpation of the fistulous tract and part of the gland involved. This operative intervention is rather difficult but is imperative on account of the dangerous complications liable to set in at any moment.

67. **Perineal Cystotomy.**—By a transverse incision of the perineum followed by detachment of the rectum, the bladder is freely exposed without the interposition of urethra, etc. Frank has operated on the bladder in 3 cases by this method and has found it superior to others, as he details at length.

68. **Dangers of Raising the Pelvis.**—Kraske's communication has previously been referred to in THE JOURNAL as it was presented at the German Congress of Surgery. He reports 2 fatalities which he ascribes to the Trendelenburg position. In one case the heart was degenerated and the distension of the organ and high pressure of the blood in the inferior vena cava entailed acute and irreparable dilatation of the heart. The conditions noted in the second fatal case demonstrate that it may be dangerous to raise the pelvis in obese subjects, especially those with very fat omentum, mesentery and appendices epiploicæ, as these factors favor displacement of the intestines and consequent occlusion. Pressure against the liver may induce congestion in the portal vein and congestion and hemorrhage in the stomach lining. Postoperative gastric hematemesis may be due to this cause. He advises shortening or avoiding altogether the Trendelenburg position in operating on very corpulent subjects, suggesting that its effects should be counteracted afterward by raising the other end of the trunk as soon as possible, and avoiding the use of all constricting bandages.

70. **Tuberculosis of Posterior Segments of Spine.**—Wieting presents a careful study of 14 cases of this affection and 89 he has collected in the literature. He practices in Turkey.

72. **Complete Perforation of Chest from Side to Side by Broom Handle.**—The case described was one that caused much comment at the German Congress of Surgery. A woman fell from a step-ladder on a broom handle which entered at one axilla and emerged at the other, but without breaking the skin at the latter point. There was traumatic pneumothorax, also extensive subcutaneous emphysema which acted as a safety valve for the air accumulating in the thorax. The various organs in the chest had been pushed aside without injury. When seen five and one-half hours after the accident, each axilla was tamponed tight and constricting bandages applied. The air was soon absorbed and recovery was prompt and complete with no signs of infection.

73. **Local Irritations and Application of Heat.**—Wessely's experiments have convinced him that local application of heat attracts the immune bodies to the points where they are needed to defend against invasion of microbes. His interesting experiments were made on rabbits' eyes.

Beiträge zur klin. Chirurgie, Tübingen.

Last indexed page 1236.

75 (XXXIX, No. 3.) *Zur akuten Osteomyelitis im Gebiete des Hüftgelenks (in hip). B. Honsell (Tübingen).

76 *Beitrag zu den extrakraniellen Aneurysmen der Carotis interna. C. Blauel (ibid).
77 *Ueber primäre Tuberkulose der quergestreiften Muskeln (of striated muscles). E. Zeller (ibid).
78 *Resultate der Exstirpation des tuberkulösen Sehnen-Scheiden-Hygroms der Hand. B. Zöppritz (ibid).
79 *Retropharyngeal Tumors. H. Hellendall (Strasburg).—Ueber retropharyngeale Geschwülste.
80 *Treatment of Fractures of Patella and Remote Results. G. Schmidt (Breslau).—Entstehung und Behandlung der Kniescheibenbrüche mit besonderer Berücksichtigung der Dauererfolge.
81 *Zur Diagnose und Therapie der Kleinhirnabszesse (cerebellar abscesses). W. Lossen (Carlsruhe).

75. **Acute Osteomyelitis in Hip.**—In early childhood this process is liable to be comparatively benign. Later in life the severer cases, with suppuration of the joint, should be treated by amply exposing and resecting the parts. Under other conditions conservative treatment is generally indicated. Including the moderately severe and the milder cases, the record in the Tübingen clinic is now 121 cases with a mortality of 14 per cent. Twelve died without any operative intervention, and 3 of the fatal cases had been treated by resection and 2 by exarticulation. The *x*-ray is the most useful aid for diagnosing the condition and its consequences, as Honsell demonstrates by numerous examples and an anatomic study of the parts involved. Recovery was complete in 89, including 38 with ankylosis, 29 with spontaneous luxation and 21 with detachment of the epiphysis. Resection was done in only 19 and exarticulation in 2 cases. Total mortality, 14 per cent.

76. **Extracranial Aneurism of Carotid.**—The patient was a woman 58 years old who had suffered for ten years from an aneurism of the internal carotid. Sudden rupture causing a false aneurism entailed severe symptoms of dyspnea, neuralgia, etc., requiring tracheotomy. The rapid increase in size of the tumor imposed further operation and the common carotid was ligated and the aneurism extirpated, with complete success.

77. **Primary Tuberculosis of Striated Muscles.**—Zeller reports 2 new cases.

78. **Tuberculous Hygromata.**—Zöppritz states that 35 cases of tuberculous hygroma in a tendon sheath on the hand have been treated by extirpation of the cyst at the Tübingen clinic. All but 14 were male subjects, and the majority were between 20 and 40 years old. The remote results in 31 cases are known; three-fourths of the patients have been completely cured during the years that have elapsed since, up to fifteen in some instances. The functional results were perfect in 11 cases and nearly perfect in 13. Recurrence was observed in 9, and 4 of the patients have succumbed to an intercurrent disease.

79. **Retropharyngeal Tumors.**—Hellendall's experience with extrapharyngeal operations has been more favorable than with the intrapharyngeal; the subsequent infection and mortality are much less with the former. He reviews 31 cases, including 23 treated by radical intervention, and confirms the assertions of others in regard to the almost exclusively connective-tissue nature of these tumors. Out of 27 examined under the microscope, only 2 were of epithelial nature and only 10 benign tumors. His article discusses the subject from various points of view, symptoms, course, location, etc.

80. **Fractures of Patella.**—Fifty-two cases of fracture of the patella have been observed at Breslau. In 31 cases the patella was sutured, while 17 were treated by massage alone. The fracture may be due to contusion or laceration, and the latter particularly requires suture as it prevents extravasation, interposition of soft parts and canting of the fragments, while it insures firm union and permits early movements of the joint. In case of a recent fracture the incision is made across, but in old cases the parts are incised lengthwise. With a recent fracture it is deemed best sometimes to suture with aluminum bronze wire the parapatellar lacerations. As a general rule, however, no suture is attempted unless asepsis is reasonably certain. Schmidt reviews the particulars of the entire series.

81. **Diagnosis and Treatment of Abscess in Cerebellum.**—Eight out of 10 cases of cerebellar abscess have been operated on at Carlsruhe by von Beck, and three have been permanently cured by the intervention. The cause of the abscess was invariably a chronic suppuration in the ear. In 8 cases there was a cholesteatoma of the tympanum, in 2 inflammatory or suppurative mastoiditis. In 6 cases the abscess was on the left side and in 1 it was bilateral. It must be opened at once and an accompanying meningitis is not an absolute contraindication unless too extensive. Prompt operation is imperative even on a presumptive diagnosis, at least opening up the sinus and dura, with exploratory puncture and incision. Beck's technic is described in detail, with brief notes on the various cases.

Deutsche Med. Wochenschrift, Berlin and Leipsic.

82 (XXIX, No. 46.) *Zur Aetiologie der Ruhr (dysentery). Jürgens (Berlin).
83 Ueber pustulöse Typhus-Roseola nebst bakteriologischen Untersuchungen. E. Birnbaum and H. Weber.
84 *Zur Asepsis des Katheterismus und der Cystoskopie. L. Casper (Berlin).
85 *Substitution of Entire Shaft of Radius by Ivory Rod. K. Vogel (Bonn).—Fall von Ersatz der ganzen Radius-Diaphyse durch einen Elfenbeinstift.
86 Zur Biochemie der Gravidität. W. Liepmann and E. Opitz.
87 *Prevention of Iodism. F. Lesser.—Zur Kenntnis und Verhütung des Jodismus.
88 Ergebnisse der vom 1892 bis 1902 in Garnison-Lazareth zu Allenstein beobachteten Pneumonie-Fälle. F. Becker.
89 *Sterilization of Silk by Diffusing Currents. J. Ausin (Erwähnen).—Sterilisation chirurgischer Seide durch Diffusionsströme.
90 The German Life Insurance Societies During 1902. Guttstadt (Berlin).—Die deutschen Lebensversicherung-Gesellschaften im Jahre 1902.
91 Soziale Medizin und Hygiene. Landsberger. Professional Matters. Ibid.—Standesangelegenheiten. Umschau.
92 (No. 47.) *"Occult" Blood in Feces as Sign of Ulcer. I. Boas.—Ueber die Diagnose des Ulcus ventriculi mittelst Nachweises occulter Blutanwesenheit in den Fäces.
93 *Zur Prophylaxis des Magenkrebses (gastric cancer). W. A. Katz (Hamburg).
94 Study of Movability of Heart. H. Silbergleit.—Zur Kenntnis der Herzbeweglichkeit.
95 Isolated Laceration of Crucial Ligaments of Knee. Pagenstecher.—Die isolirte Zerreissung der Kreuzbänder des Knies.
96 Zur Hernien-Tuberkulose. Abel.
97 Perforation of Gallstone into Stomach. Fleck.—Durchbruch eines Gallensteins in den Magen.
98 Prophylaxis einer Malaria-Epidemie mittelst Chinin-Therapie. P. C. Korteweg (Wormerveer).
99 Ueber Jod-Ferratose bei Skrophulose und Lues. L. Bardach.
100 Industrial Protection of Workmen and Permanent Exposition. T. Sommerfeld (Berlin).—Gewerblicher Arbeiterschutz und die ständige Ausstellung für Arbeiterwohlfahrt.
101 Für Darwin. B. Rawitz.

82. **Etiology of Dysentery.**—Jürgens denies that dysentery can be due to a single variety of bacilli and describes an epidemic of 26 cases of severe dysentery which occurred in a certain regiment during the August military maneuvers in West Prussia. He cultivated from the stools in 19 cases a bacillus resembling that of Flexner's and agglutinating with a Flexner animal serum. It differed in several respects from the Kruse-Shiga and other bacteria. The serum of the patients agglutinated the isolated bacilli.

84. **Asepsis in Catheterization and Cystoscopy.**—Casper recommends a mixture of glycerin, water and tragacanth with 1/500 mercury oxycyanate as an ideal lubricant for catheters and sounds. It is similar to the lubricants proposed by Guyon and Kraus, but has the advantage that it does not irritate the urethra, renders the instruments extraordinarily smooth and slippery, is rapidly soluble in water and dissolves as soon as the instrument is inserted in the bladder, without obscuring the view through the cystoscope. It can be kept in paint tubes, ready for use at any moment. For rinsing out the bladder he has discarded boric acid, etc., in favor of mercury oxycyanate, 1/5000, as it is limpid, does not irritate the tissues or injure the instruments and although not a strong antiseptic yet has power to inhibit the growth of microbes. He sterilizes the cystoscope and catheter by mechanically rubbing all the parts with three gauze sponges dipped in tincture of soap, using each a minute in turn. The instrument is then wrapped in a compress impregnated with tincture of soap and left in it until needed. The removable parts are boiled for five minutes.

85. **Ivory Radius.**—A little girl fell on her arm and caries developed in the radius with almost complete destruction of the diaphysis. It shelled out as a sequester and was substi-

tuted by an ivory rod fitting into the epiphysis at each end. The child goes to school and plays like other children, using her hand as before. Only active pronation and supination are a little difficult or restricted, otherwise the hand functions perfectly. Radiograms a year later show considerable proliferation from the retained periosteum and epiphyses, and the slight functional disturbances have all subsided. Vogel remarks that the experiment has thus been crowned with perfect success, and whether the ivory rod is absorbed or expelled later or tolerated as a foreign body is immaterial so far as the success of the intervention is concerned.

87. **Iodism.**—Lesser explains iodism as the effect of the iodized alkalies suddenly flooding the organism and pouring out through the mucous membranes. This afflux of alkali causes a catarrhal condition in the mucosæ which is the cause of the iodin intoxication. He suggests in prophylaxis that the iodin salts should be administered in a mucilaginous vehicle to render absorption slower and more gradual. Also that the daily quantum should be fractioned into as many doses as possible. It may be advisable sometimes to administer the iodid per rectum, which also retards absorption. Another prophylactic measure is to use the iodin in the form of iodized fats or by injections of iodipin. It might be possible to commence with small injections of iodipin to accustom the organism gradually to the action of a moderate circulation of iodin, in cases of very pronounced idiosyncrasy against it, and then gradually substitute internal administration.

89. **Sterilization of Silk by Diffusion Currents.**—Ahlfeld and Vahle announced as long ago as 1896 that alcohol and water have no disinfecting power alone, but when one is added to an article impregnated with the other, the diffusion causes currents in and around the bacteria which kill staphylococci in two minutes. Ausin has been applying this suggestion to the sterilization of silk. He first boils it in alcohol to remove all fat, impurities, etc. It is then set aside to dry and before an operation it is boiled in water for twenty minutes, then placed for five minutes in alcohol, then for five minutes in water and again boiled in alcohol for twenty minutes. He has not had a single stitch abscess or mishap of any kind since he has been using silk thus prepared.

92. **"Occult" Blood in Feces Sign of Gastric Ulcer.**—Boas is much surprised that more attention has not been paid to his previous announcements of the pathognomonic importance of minute quantities of blood in the stomach content or feces as a sign of some ulcerative lesion in the stomach lining. (See THE JOURNAL of September 20, 1902, p. 726, abstract 42.) These occult bleedings have just as much importance as pronounced hematemesis or melena, and will frequently decide a dubious diagnosis long before any physical signs of a tumor are present. This is especially the case when due attention is paid to the familiar sensitive point in the epigastrium and the other painful point in the back, near the left, twelfth dorsal vertebra, to which he has called attention. It is a simpler matter to detect this occult blood in the feces than in the stomach content, as the introduction of the stomach sound is liable to cause a slight erosion which might bleed and thus lead to erroneous deductions. Minimal amounts of blood can be readily detected in the feces with the sensitive guaiacum test, which has revealed blood in the feces after ingestion of even as small an amount as 3 c.c. Boas mentions as an instance of the delicacy of the test that in a case in which a gastric ulcer was suspected, no blood was found in the feces on repeated investigation until one day and then it was learned that the patient's gum had bled very slightly while the teeth were being brushed. Every precaution must be taken to exclude raw or partly cooked blood from the diet for two days before the test, and also to insure soft stools with Carlsbad salts or something of the kind. Menstruation, hemorrhoids, etc., must also be excluded. The occult bleeding was frequently noted when the subjects had recently complained of pains in the stomach. This was particularly the case when the patient was not on an "ulcer diet." On the other hand, after restricting the patient to a strict milk diet for several days it was usually impossible to detect any blood in the feces. When the blood persisted in the feces on a milk diet, the assumption was strongly in favor of carcinoma developing on the basis of an ulcer. The blood findings may vary from day to day and consequently repeated investigation is necessary. Boas has had his presumptive diagnosis of an ulcer confirmed by these occult blood findings in 25 cases. It has proved still more valuable, however, in the cases in which the diagnosis and consequently the justification for treatment wavered between a purely nervous cardialgia and ulcerative processes in the mucous lining of the stomach or duodenum. His doubts have been banished in many instances of this kind and appropriate treatment successfully instituted solely on the basis of the determination of these occult bleedings. They require the same critical judgment as more copious hemorrhages and, in fact, may be merely the preliminary to the latter. These occult bleedings will be found very valuable from a therapeutic point of view, as by their aid we are able to trace the results of treatment, to learn whether bismuth, silver nitrate, etc., actually improve the morbid conditions to the extent anticipated. They have already established beyond question the great value of a strict milk diet for the healing of ulcerative processes in the stomach. On such a diet the occult bleeding ceases and blood can no longer be detected in the feces, even after resumption of a mixed diet. The softer consistency of the milk may have something to do with the benefits derived, and further studies in this line are urgently needed. Boas thinks that it is impossible to treat an ulcus subject as an out-patient. The duration of treatment varies in the practice of different physicians from two to six weeks. With the aid of the occult blood we will be able to establish an individual term of treatment in each case dismissing the patient as soon as repeated tests fail to disclose further occult bleeding for several days in succession. The technic of the tests is very simple. About 20 c.c. of ether are added to 5 to 1 gm. of soft or softened stools. This removes the fats and prevents disturbing emulsions later. About 3 to 5 c.c. of glacial acetic acid are then added to the feces and the whole is poured into a test tube and extracted again with ether. There must be no admixture of alcohol as this disturbs the test. As guaiacum dissolves readily in ether it is not necessary to use the tincture. A few grains of finely pulverized guaiacum resin are added to the ether extract, the whole is carefully shaken and then 20 to 30 drops of oil of turpentine are added. The whole is shaken up again and then set aside. The color gradually changes to a violet or blue, rendered still more intense by addition of chloroform. This blue tint is sometimes masked by the brownish color of the fluid and the findings of the test can be controlled by repeating it with Klunge's aloin test. As much aloin as can be taken up on the tip of a small spatula is placed in a test-tube and lightly shaken up with 3 to 5 c.c. of 60 to 70 per cent. alcohol. The acetic-acid and ether extract of the feces or stomach content, prepared as above described, is treated with 20 to 30 drops of turpentine and then immediately afterward with 10 to 15 drops of the freshly prepared aloin solution. In the presence of blood the fluid rapidly assumes a bright red color which turns to a fairly durable cherry red as it stands. If there is no blood the fluid remains yellow for an hour or so and then becomes a light pink. The color changes may be hastened by adding a few drops of chloroform. Boas makes a practice of conducting the two tests as controls, and believes that the aloin is superior in several points to the guaiacum. It is not influenced by the presence of fats or fatty acids and is sometimes positive when the guaiacum findings are dubious. Only once in his experience was there a pronounced guaiacum reaction with no aloin response. A still further modification of the technic is the substitution of dilute hydrogen dioxid for the oil of turpentine. In both the tests the response is just as characteristic with the addition of 25 to 30 drops of this fluid as with the turpentine.

93. **Prophylaxis of Gastric Cancer.**—Katz comments on the rarity of cancer in that part of the digestive tract in which the chyme is of a soft consistency. He thinks that gastric cancer would become less frequent if the diet were restricted

more to soft foods as free as possible from solid substances. He urges that more attention should be paid to thorough mastication, to the use of soft foods and to copious ingestion of fluids while solid foods are being eaten. He believes that by approximating the conditions in the stomach to those which obtain in the duodenum, cancer in the stomach will become as much of a rarity as cancer of the small intestine.

Deutsche Zeitschrift f. Chirurgie, Leipsic.

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102 (LXX, Nos. 1-2.) *Zur Therapie der Sarkome der langen Röhrenknochen (of long bones). K. Vogel.
103 Callus Formation After Fractures. M. Matsuoka.—Ueber die Bedeutung der Knorpelbildung bei Fraktur.
104 *Survival of Epidermis Cells in Transplanted Flaps. J. Wentscher.—Zur Ueberlebungsfähigkeit der menschlichen Epidermiszellen.
105 *Foreign Bodies in Male Bladder. M. Hirsch.—Zur Lehre von den Fremdkörpern der männlichen Harnblase.
106 Fistula from Appendix to Umbilicus in Infant Simulating Permeable Vitelline Duct. G. Lettau.—Fall von Wurmfortsatz-Nabel-Fistel unter dem Bilde des offenen Ductus omphalo-entericus.
107 Staining Faculty of Echinococcus Membrane. E. Delbanco.—Eine färberische Eigenschaft der Echinokokkenmembran.
108 Ischemic Spinal Affection with Tuberculous Spondylitis. Wieting.—Fall von ischämischer Rückenmarksaffektion bei tuberkulöser Spondylitis.
109 *Tuberculosis of Skull. Wieting and Raif.—Zur Tuberkulose der knöchernen Schädeldecke.
110 *Die Katgut-Sterilisation nach M. Claudius. A. Martina (Graz).
111 Zur Diagnose und Prognose der Rückenmarksverletzungen (spinal injuries). R. Bernstein.
112 *Zur Pathologie und Therapie der akuten Pankreas-Erkrankungen, nebst Mitteilung zweier durch Laparotomie geheilter Fälle. F. Pels-Leusden (Berlin).
113 Kasuistischer Beitrag zur Verrenkung des Kniegelenks (Luxatio tibiæ anterior). Reinitz.
114 *Zur Kenntnis der Osteomalacia chronica deformans hypertrophica (Paget). V. Schmieden (Bonn).
115 Zur Geschichte der sogen. regionären Kokain-Anesthesie. A. Krogius. Historical Sketch.
116 (Nos. 3-4.) *Plastic Operations on Skull. F. Kayser (Berlin).—Ueber primäre Schädelplastik durch Verlagerung reimplantierter Schädelbruchstücke zwischen die Lamellen der Schädelkapsel, nebst kasuistischen und klin. Bemerkungen zur Schädel- und Gehirn-Chirurgie.
117 Ist das Os naviculare carpi bipartitum und tripartitum Grubers das Produkt einer Fraktur? R. Wolff (Berlin).
118 Experiences with Injuries of Wrist. Ibid.—Die Erfahrungen über Handwurzelverletzungen verglichen mit den Ergebnissen der Varietäten-Statistik an den Knochen der Handwurzel.
119 Beiträge zur Geschwulstlehre (tumors). O. Bender.
120 *Recovery After Amputation of Both Thighs for Gangrene. R. Mühsam (Berlin).—Ueber doppelseitige Oberschenkelamputation bei embolischer Gangrän.
121 Ueber Cholesteatome (Epidermoide) der Schädelknochen Blecher.
122 *Zur Lehre von den Gelenkmäusen (joint mice). E. Boerner.

102. **Treatment of Sarcoma of Long Bones.**—Vogel advocates resection instead of amputation or exarticulation in the treatment of sarcomata of the shafts of the long bones. In the case described the humerus was affected, with extensive involvement of the soft parts. The bone was resected its entire length except for the lower 3 cm. Recovery was smooth and the patient has been in good health—no signs of recurrence—during the four years since.

104. **Survival of Epidermis Flaps.**—Wentscher's latest series of experiments include the preservation of Thiersch flaps for seven to fourteen days in a test tube plugged with cotton. The flap was then transplanted on an exposed muscle, that is, on a tissue free from epithelial elements. In two out of the four experiments, unmistakable evidences of proliferation and regeneration were noted, with considerable mitosis. One of the experiments was negative, and in the fourth no mitosis could be detected.

105. **Foreign Bodies in Male Bladder.**—Hirsch reports 8 cases observed in his service at Vienna and tabulates the details of 103 other cases published in the literature since 1856. In 2 of his 8 cases the foreign body was extracted instrumentally. In only 4 out of the total 111 cases was the foreign body spontaneously evacuated. Rona managed to expel a piece of a catheter in the bladder by stroking it downward through the rectum. The foreign body was extracted by aspiration in 3 cases.

109. **Tuberculosis of Cranial Bones.**—Wieting reports 10 cases observed in Turkey. Six of the patients were children between 3 and 10 and the others between 14 and 40. The prognosis depends on the absence or presence of tuberculous lesions elsewhere. When primary, the affection is usually cured by radical ablation of the focus.

110. **Claudius' Iodized Catgut.**—Martina has followed Claudius' method of preparing catgut in 70 cases, and healing was by primary intention in all but two, and in these cases the suture was above reproach. No untoward symptoms from the use of the iodin were observed in any instance. It evidently enhances the strength of the catgut, but this effect is transient. After five or six days the threads become so loose that the catgut can not be safely used for suturing the skin, muscles or fascia, and hence can not be used in herniotomies. Its chief field of usefulness is for ligatures, especially in operations on goiters and in amputations. He omits the rinsing in carbolic solution which Claudius regards as indispensable. Experimental tests of the iodized catgut are described, all confirming the above statements.

112. **Acute Pancreatitis.**—Pels-Leusden had occasion to treat 2 patients who exhibited symptoms of peritonitis accompanied by violent vomiting and extreme heart weakness. The abdominal cavity was opened and the pancreas region merely drained with a strip of iodoform gauze as patches of fatty necrosis were discovered in the pancreas and, in one case, a large amount of a yellowish slightly turbid exudate was found in the abdominal cavity. The vomiting ceased at once after the operation and the patients promptly recovered. They were both women, one 21, the other 53 years old The writer is convinced that abdominal fatty tissue necrosis is invariably due to an affection in the pancreas accompanied by stagnation of the secretions in the organ.

114. **Osteomalacia Chronica Deformans Hypertrophica.**—The right tibia was involved in the case described by Schmieden, the patient a woman of 58. The bone was very much enlarged with curvature and with brown pigmented patches on the skin. After amputation it was found that the bone substance was so soft it could be indented with the fingernail. The microscope showed that the normal bone tissue had been destroyed, and that there was very little new bone formation, with almost entire absence of lime salts. A wedge of the tibia was resected at first, with rapid healing. Later, part of the knee was removed, the wound suppurating interminably until the patient begged for amputation, which freed her once and for all from her affection, which had lasted for three years.

116. **Skull Plastics.**—Kayser believes in reimplanting the bone fragments in case of traumatic defects in the skull, whenever such a course is practical. Pieces of the inner table are especially favorable for the procedure as they can be readily fitted into place and owing to their smooth inner surface do not induce formation of adhesions. The application of the fragments to close the defect must immediately follow the injury. The fragments of the inner table should be turned to fit them into place in the cancellated tissue between the tables. By this fixation all danger of pressure on the brain from any loose sequestra is prevented, as also prolapse of the brain. Secondary plastic operations are not interfered with, while it is thus possible to close the gap in the skull at once, even in case of injury of the protecting membranes and of the brain itself. In a case thus treated there was a depression in the skull, 7 by 5 cm., and 1.5 cm. deep, in the posterior half of the left parietal bone. The bone was cracked and broken into a number of pieces, the brain substance below much injured. After the fragments had been removed, the wound cleansed and hemorrhage arrested by tamponing, two of the large pieces of the inner table were reimplanted in the defect, turning them around so the longer diameter of the bones bridged the shorter diameter of the gap. No narcosis was necessary and all the symptoms gradually subsided so that the young man now considers himself well. The inner table always fractures more extensively than the outer one in such injuries, and is peculiarly adapted for autoplastics in these cases.

120. **Embolic Gangrene.**—The prompt recovery after amputation of both thighs in the case reported should encourage others to resort to operation in time. The patient was a man of 41 and the gangrene developed suddenly a week after an

attack of grippal endocarditis. The case indicates that the presence of numerous bacteria in the blood does not contraindicate amputation. The stumps should be merely tamponed at first. In a second fatal case described the gangrene developed after typhoid, and the slow, gradual course suggested thrombosis, but an embolus was found in the right iliac artery and another in the left hypogastric, with an embolic thrombus at the bifurcation of the aorta.

122. **Joint Mice.**—Boerner devotes 54 pages to a clinical and pathologic-anatomic study of loose bodies in the joints, profusely illustrated. Thirty-five cases are described in detail. He rejects the assumption of an inflammatory origin.

Münchener Med. Wochenschrift, Munich.

123 (L, No. 45.) *Ueber Psychiatrie und experimentelle Psychologie in Deutschland. W. Weygandt (Würzburg).
124 Compressed Yeast and the Fermentation Test. E. Münzer (Prague).—Dauerhefe und die Gahrungsprobe.
125 Ueber bemerkenswerthe Complicationen im Verlauf der Carcinoma ventriculi. F. Kaufmann.
126 *Zur Kenntnis der Hyperhidrosis universalis. F. Müller.
127 Tabes incipiens und Syphilis cerebro-spinalis. A. Schittenhelm (Breslau).
128 Zwei Fälle von Verletzung hydrokephalischer Gehirne (brain injury). Marckwald.
129 *Die familiäre amaurotische Idiotie und ihre Diagnose. A. Mülberger (London).
131 Hygiene und Zuchtwahl (natural selection). Kossmann.
132 (No. 46.) *Functional Kidney Tests. R. Göbell.—Zur functionellen Nieren-Diagnostik.
133 *Zur Narkose in der Gynäkologie mit bes. Berücksichtigung der Witzel'schen Aether-Tropf-Methode. H. Fuchs (Kiel).
134 *Die moderne Aether-Narkose. C. Hofmann.
135 *Die Aether-Narkose in Verbindung mit Morphium-Skopolamin-Injektionen. C. Hartog (Landau's clinic, Berlin).
136 *Morphin-Skopolamin-Narkose. B. Korff (Freiburg).
137 Transient Cerebral Disturbance After Exposure to Intense Cold. H. Vogt (Göttingen).—Transitorische Geistesstörung nach intensiver Kältewirkung.
138 Das Röntgen-instrumentarium für den Praktiker. H. Kraft (Strasburg).
139 Interrupters in Röntgen Technic. A. Köhler (Wiesbaden).—Erfahrungen über Unterbrecher im R.-Technik.
140 Inexpensive Compressing Diaphragm. Faulhaber (Würzburg).—Eine billige Kompressionsblende.
141 How to Live in Egypt. E. Fromherz.—Wie kann man in Aegypten leben?

123. **Psychiatry and Experimental Psychology in Germany.**—Weygandt describes tests of the memory, attention, etc., conducted on mentally affected and on healthy subjects and shows the great value of the results for psychiatry. He also reviews similar research published by other German writers. Among the facts brought out is the rapid and pronounced disturbance in the perceptive faculties entailed by paraldehyd—a fact which explains its prompt sedative action. Tests of the memory before and after an injection of morphin showed that the subject's capacity to memorize unconnected syllables diminished nearly if not quite one-half after the morphin. A still more pronounced reduction in the memorizing tests was observed on subjects purposely kept awake, and also during fasting. He thinks that the results already obtained show the necessity for a laboratory for experimental psychology in every psychiatric clinic, in charge of trained assistants.

126. **Hyperhidrosis Universalis.**—Gillet has reported a case of hyperhidrosis universalis occurring at the periods of suppressed menses and ceasing as soon as menstruation was normally resumed. This is the only case Müller has been able to find resembling at all the one he here describes. His patient was a trained nurse, who, after a strenuous winter's work, noted hyperhidrosis universalis at the time of the menses, ceasing during the intervals, finally supplanting the menses completely, and becoming continous. In six months she lost 40 pounds and became very weak, suffering besides from eczema caused by the constant sweating. The symptoms indicated exaggerated oxidation processes, and Müller explains them as the reaction of the organism to excessive functioning of the sweat centers, with the consequent great loss of warmth. The affection was probably a manifestation of neurasthenia. No treatment was effectual and the patient succumbed about eighteen months after the first symptoms had been observed. Postmortem examination was not allowed, and there is a possibility that the trouble may have been due to some brain tumor.

129. **Familial Amaurotic Idiocy.**—Mülberger relates that in a well-to-do German family, free from morbid taint of any kind, the two children are both typical specimens of familial amaurotic idiocy only that the eye findings differ a little from those hitherto recorded. The gray atrophy of the optic nerve was the first morbid process observed, and to date is the only one in the eyes of the younger child, while the other presents already the typical appearance in the region of the macula.

132. **Functional Kidney Tests.**—This communication issues from Helferich's clinic at Kiel and tabulates the findings in 7 cases of kidney trouble in which the functional tests were applied. In spite of their failings it is impossible to dispense with these tests, Göbell exclaims, but he proceeds to prove that certain preliminaries are indispensable. In the first place the patient should be put on a certain standard test diet for several days before the tests are applied. It is important, further, that the urine should be drawn at a certain interval after the meals and that the catheters should be left in the ureters for two or three hours in order that the urine corresponding to certain divisions of time may be examined. The amount of urine and its molecular concentration should both be determined during these separate periods. These points must be regarded, as a surgically affected kidney does not do its work regularly but rather spasmodically, and also because the proportions between the freezing-point and the molecular concentration of the urine from both kidneys vary during the different periods. A still further reason is the fact that the relation between the freezing-point of the urine from each kidney does not correctly represent their functional activity. In 2 of his cases the findings of the functional tests at first would have led to erroneous deductions if they had not been controlled and rectified by repetition of the tests two or three times. The composite findings of three or four tests afforded data confirmed by the operation and its results, as he shows in a comprehensive table.

133. **Ether Drop Narcosis in Gynecology.**—Fuchs extols the superiority of the ether-drop method of narcosis, especially for gynecology. Chloroform will in future maintain its place as an occasional adjuvant, especially in laparotomies, and also as an indispensable aid in obstetrics. In 300 cases in which he has used the morphin-ether drop narcosis he has had no cases of asphyxia or noticeable cyanosis and only 2 of febrile bronchial catarrh, both consecutive to a laparotomy. Chronic bronchitis is no contraindication to ether. The slightly increased expectoration after the narcosis is rather an advantage than the reverse.

134. **Ether Narcosis.**—Hofmann states the ideals of modern narcosis as the freest possible intake of atmospheric air and the smallest amount of ether, supplemented if necessary by some other substance. He also lauds the ether drop method among other reasons for its simple technic which does not require the painstaking care needed for chloroform.

135. **Ether-Drop Narcosis in Combination with Morphin-Scopolamin Injections.**—Hartog is assistant at Landau's clinic and reports very gratifying experiences with the narcosis indicated in the title. He reduced the dose very materially below those recommended by the author of the latter method, injecting subcutaneously only .5 mgm. of scopolamin and 1 cg. morphin at another point thirty minutes to an hour before the operation. In 93 cases in which this technic was followed there were none of the inconveniences of the usual narcosis, no vomiting nor agitation, etc.

136. **Morphin-Scopolamin Narcosis.**—Korff is the originator of this method and announces that a few unfavorable experiences reported by others impelled him to seek the minimum doses possible to induce narcosis. He gives the particulars of 50 important operations done under his modified technic. He does not use it on patients under 16 nor over 60 years of age, but in all other cases applies it without reserve. He has found that equally good results are attained when only .001 gm. scopolamin hydrobromate is used and .25 gm. morphin in 10 gm. distilled water. He injects one-third of a Pravaz syringe two and a half hours before the operation, another third one and a half hours, and the other third half an hour before.